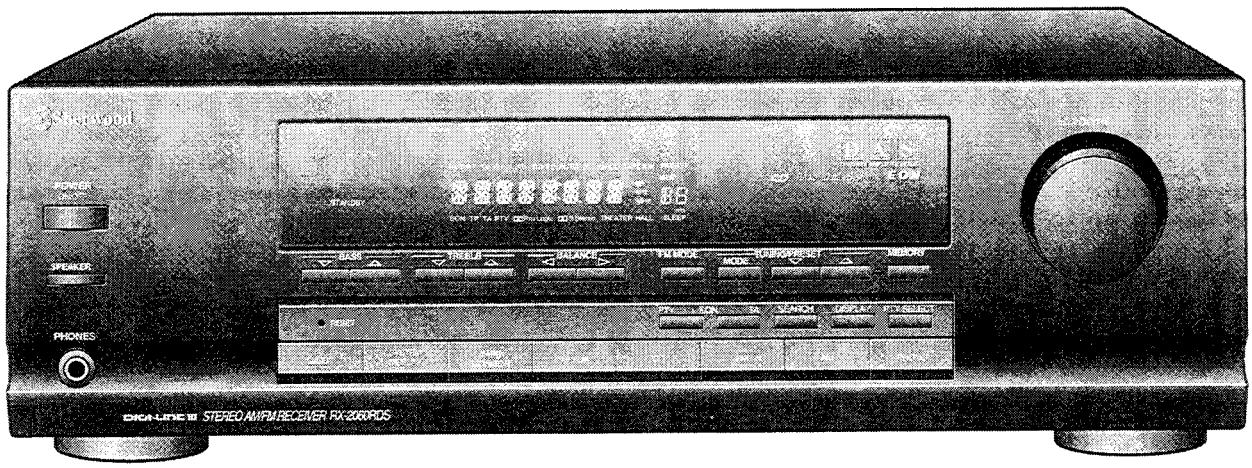
SERVICE MANUAL

RX-2060R/RX-2060RDS

STEREO AM/FM RECEIVER



■ **CONTENTS** ■

SAFETY PRECAUTIONS ····2
SPECIFICATIONS ····3
BLOCK DIAGRAM ····5
WIRING DIAGRAM ····7
CIRCUIT DESCRIPTION ····9
ALIGNMENT PROCEDURES ····13
TROUBLESHOOTING ····16
MECHANICAL PARTS LIST ····19
EXPLODED VIEW ····21
PRINTED CIRCUIT BOARDS ····23
ELECTRICAL PARTS LIST ····27
IC FUNCTIONAL BLOCK DIAGRAM ····38
SCHEMATIC DIAGRAMS (I), (II), (III) ····41

Sherwood®

SAFETY PRECAUTIONS

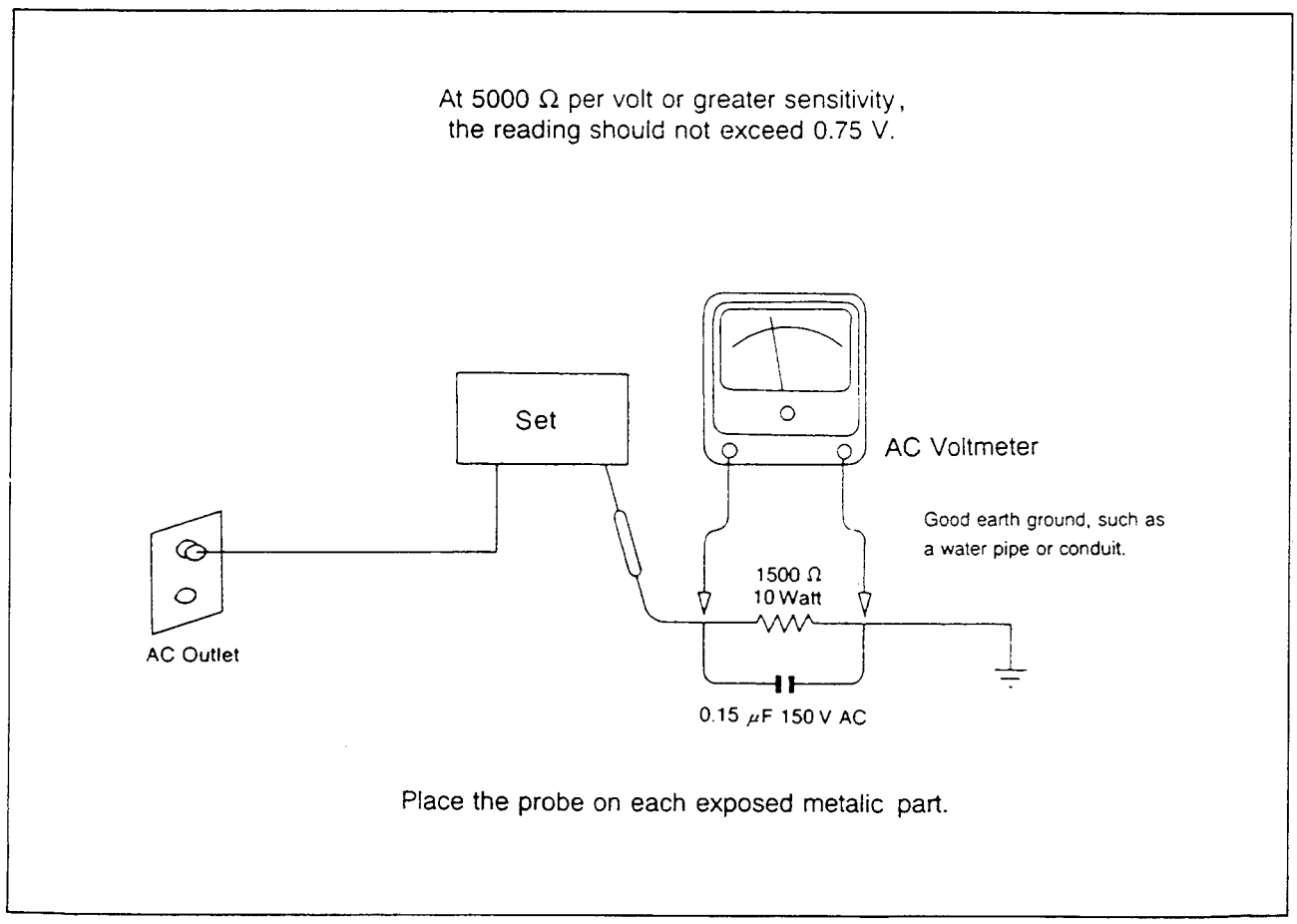
WARNING

Before servicing this unit, familiarize yourself with the following precautions:

1. Many electrical and mechanical parts in this chassis have special safety characteristics that often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltge, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by ⚠ in the schematic diagram and the parts list.

   Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

2. Before returning the set to the customer, always do an AC leakage current check on the exposed metal parts of the cabinet, such as terminals, screw heads, and metal overlays, to be sure the set is safe to operate danger of electrical shock. Plug the AC line cord directly into a 120 V AC outlet (120 V AC version only). (Do not use a line isolation transformer during this check.) Be sure your AC voltmeter has a sensitivity of 5000 Ω per volt or greater. Then connect a 1500 Ω 10 watt resistor, paralleled by a 0.15 μF 150 V AC capacitor, between a known good earth ground (such as a water pipe, or conduit) and the exposed metalic is parts, one at a time. Measure the AC voltage across the combination of a 1500 Ω resistor and a 0.15 μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metalic part. Voltage measured must not exceed 0.75V RMS. This corresponds to 0.2 mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


At 5000 Ω per volt or greater sensitivity,
the reading should not exceed 0.75 V.
Set
AC Voltmeter
Good earth ground, such as
a water pipe or conduit.
1500 Ω
10 Watt
AC Outlet
0.15 μF 150 V AC
Place the probe on each exposed metalic part.

SPECIFICATIONS

☞ FRONT AMP SECTION

Measuring methods are based on IHF and IEC standard 268-3.
Measurements conditions, unless otherwise noted:

* Output resistive load: 8 ohms/Both channel driven.
* Tone (Bass, Treble), Balance, EQ control: Center Position, Other SW's: OFF.
* Nominal input level: 5 mV for MM, 0.5 mV for MC, 500 mV for general purpose inputs.
* Power figures should be kept minimum 10 min. between 15 and 35 ℃.
* Terminator: 100 ohms for MC, 1 kohms for MM and general purpose inputs.
* Filter: IHF-A filter * R/O: Rated Output

NO	DESCRIPTION	INPUT	FREQ.	REMARK	UNIT	LIMIT	NOMINAL
1	Input Sensitivity	AUX	1 kHz	-	mV	±50	200
		MM	1 kHz	-	mV	±0.5	3.5
2	Channel Balance	AUX	1 kHz	R/O to -40 dB	dB	±3	±2
			1 kHz	-40 to -60 dB	dB	±6	±4
3	Residual Noise	AUX	1 kHz	VOL. min.	mV	1	0.8
4	Total Harmonic Distortion	AUX	50 Hz	45 W/1 W	%	0.2	0.1
			1 kHz	45 W/1 W	%	0.2	0.1
			20 kHz	45 W/1 W	%	0.2	0.1
5	Continuous Average Power at 0.7% THD	AUX	50 Hz	8 ohms	W	46	50
			1 kHz	8 ohms	W	50	52
			20 kHz	8 ohms	W	46	50
6	Inter Modulation Distortion (SMPTE)	AUX	60 Hz=4	R/O	%	0.25	0.15
			7 kHz=1	1 W	%	0.25	0.15
7	Signal to Noise Ratio (IHF-A Filter)	AUX	1 kHz	R/O	dB	85	90
		MM	1 kHz	R/O	dB	68	72
8	Channel Separation	AUX	100 Hz	R/O -3 dB	dB	40	50
			1 kHz	R/O -3 dB	dB	40	50
			10 kHz	R/O -3 dB	dB	35	40
9	Function Crosstalk	CD→AUX	1/10 kHz	R/O -3 dB	dB	60/35	65/40
10	Frequency Response (-3 dB)	AUX	-	1 W	Hz~kHz	50~40	40~45
11	Tone Control, ±10 dB	AUX	100 Hz	1 W	dB	±10±2	±10±1
			10 kHz	1 W	dB	±10±2	±10±1
12	Phono Equalization	PHONO	100 Hz	TAPE OUT	dB	+13±2	-13±1
			10 kHz	TAPE OUT	dB	+13±2	-13±1
13	Input Overload at 0.5% THD	MM	1 kHz	TAPE OUT	mV	100	115

☞ AM SECTION

Measuring methods in conformity with IEC standard 315.
Measurements conditions;

* Radio frequency: 1000/999 kHz, Audio frequency: 400 Hz
* Reference level: 5 mV/m, 10 mV/m on 50 ohms, Modulation: 30%
* Test point: TP1=594 kHz, TP2=999 kHz, TP3=1404 kHz

NO	DESCRIPTION		UNIT	LIMIT	NOMINAL
1	Tuning Cover Range	LOW~HIGH	kHz	522~1611	
	Step	AUTO/Man.	kHz	9/9	
2	Usable Sensitivity S/N=20 dB	TP1	uV/m	1000	800
		TP2	uV/m	1000	800
		TP3	uV/m	1000	800
3	Signal to Noise Ratio		dB	35	40
4	Total Harmonic Distortion		%	2	1
5	Over Load Distortion at 5 mV input, 80% MOD.		%	15	10

NO	DESCRIPTION		UNIT	LIMIT	NOMINAL
6	Frequency Response at -6 dB		Hz	120~2 k	100~2.2 k
7	Selectivity	10 kHz/9 kHz	dB	20	25
8	AGC Figure of Merit		dB	40	45
9	Whistle Modulation at 1 mV/m input	$2I_F$	%	20	10
10	Image Rejection	TP3	dB	25	28
12	Auto Stop Level		uV/m	800	+400/-400
13	Output Level		mV	160	+50/-50

☞ FM SECTION

Measuring methods in conformity with IEC standard 315.
Measurements conditions FM;

* Radio frequency: 98.1 MHz, Audio frequency: 1 kHz
* Deviation: MONO=±40 kHz, Stereo=±40 kHz±7.5 kHz
* Reference level: 1 mV on (75 ohms, 300 ohms)
* Test point: TP1=90 MHz, TP2=98 MHz, TP3=106 MHz

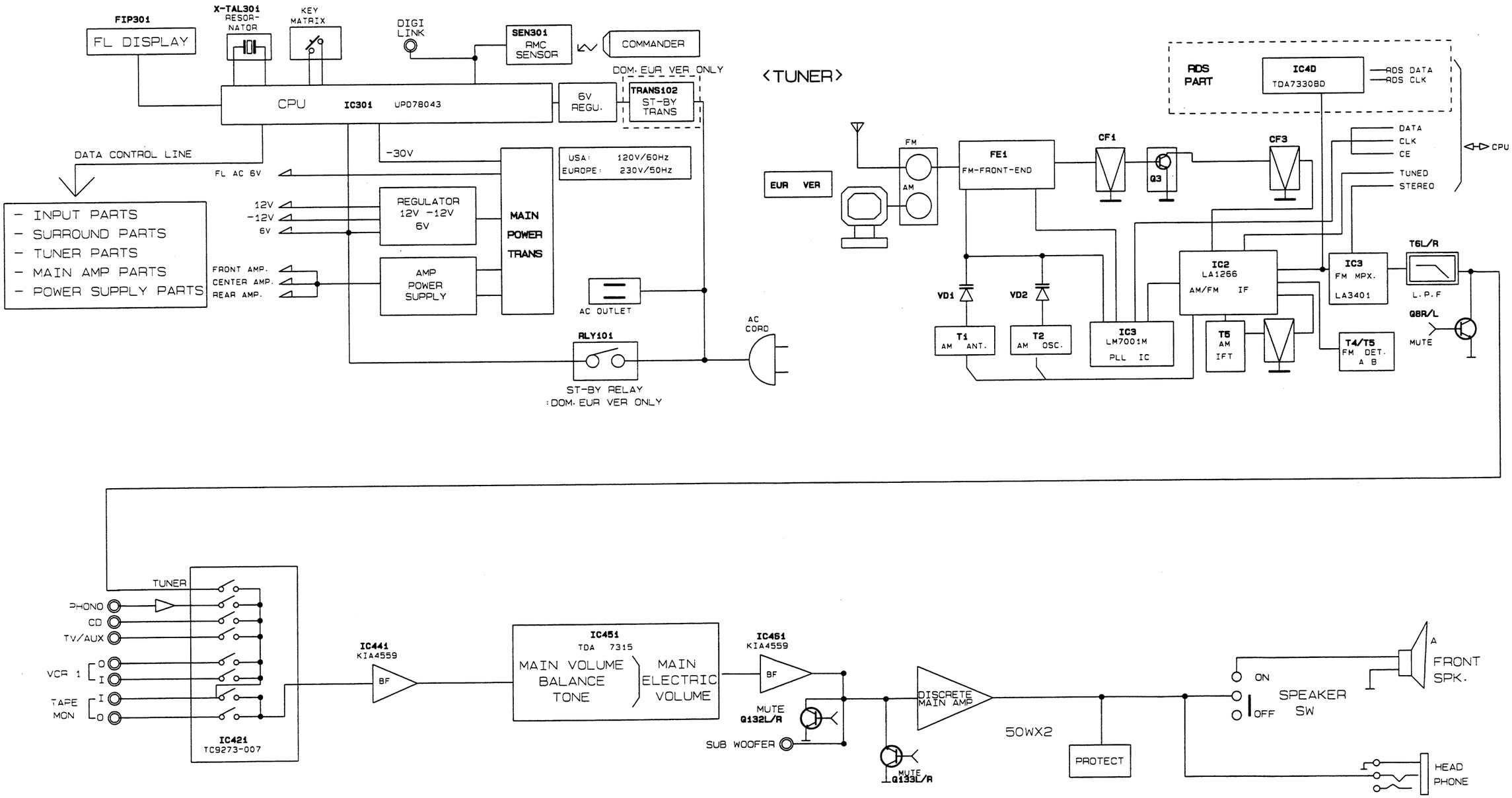
NO	DESCRIPTION		UNIT	LIMIT	NOMINAL
1	Tuning Cover Range	LOW~HIGH	MHz	87.5~108	
	Step	AUTO/Man.	kHz	100/50	
2	Usable Sensitivity	TP1	dBf	20.2	17.2
	S/N=26 dB	TP2	dBf	20.2	17.2
		TP3	dBf	20.2	17.2
3	Full Limiting Sense	Output= -3 dB	dBf	17.2	15.2
4	Auto Stop Level		dBf	31.2±5	31.2±3
5	Signal to Noise Ratio	MONO	dB	64	66
		STEREO	dB	60	65
6	Total Harmonic Distortion	MONO	%	0.5	0.3
		STEREO	%	0.8	0.5
7	46 dB Quieting Sensitivity	MONO	dBf	25.2	23.2
		STEREO	dBf	48.3	45.3
8	Frequency Response at ±1.5 dB		Hz/kHz	40/12	20/14
9	Channel Separation	100 Hz	dB	28	32
		1 kHz	dB	28	32
		10 kHz	dB	20	24
10	Spurious Response		dB	70	80
11	IF Rejection	TP1	dB	70	75
12	Image Rejection	TP3	dB	70	80
13	AM Rejection ratio		dB	50	60
14	Capture ratio		dB	3	2
15	Output Level	MONO	mV	500	+100/-100

☞ GENERAL

Power Consumption ..... 460 W
Power Supplies ..... AC 230 V, 50 Hz
Dimensions (W×H×D) ..... 440×125×280 mm
17-5/16×4-15/16×11 inchs
Weight (Net) ..... 8.02 kg (17.68 lbs)

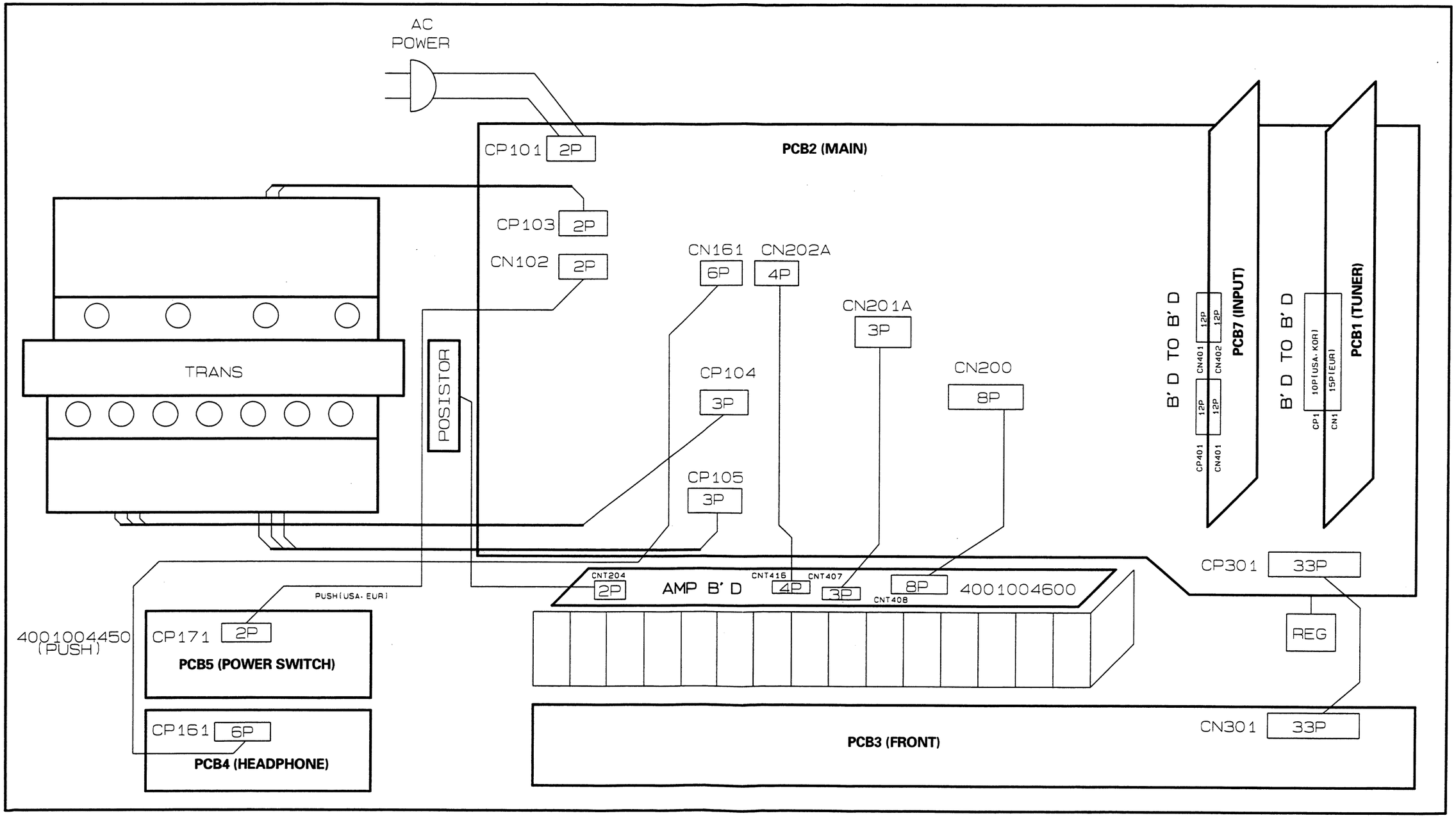
BLOCK DIAGRAM

Model No. : RX-2060R/RDS



WIRING DIAGRAM

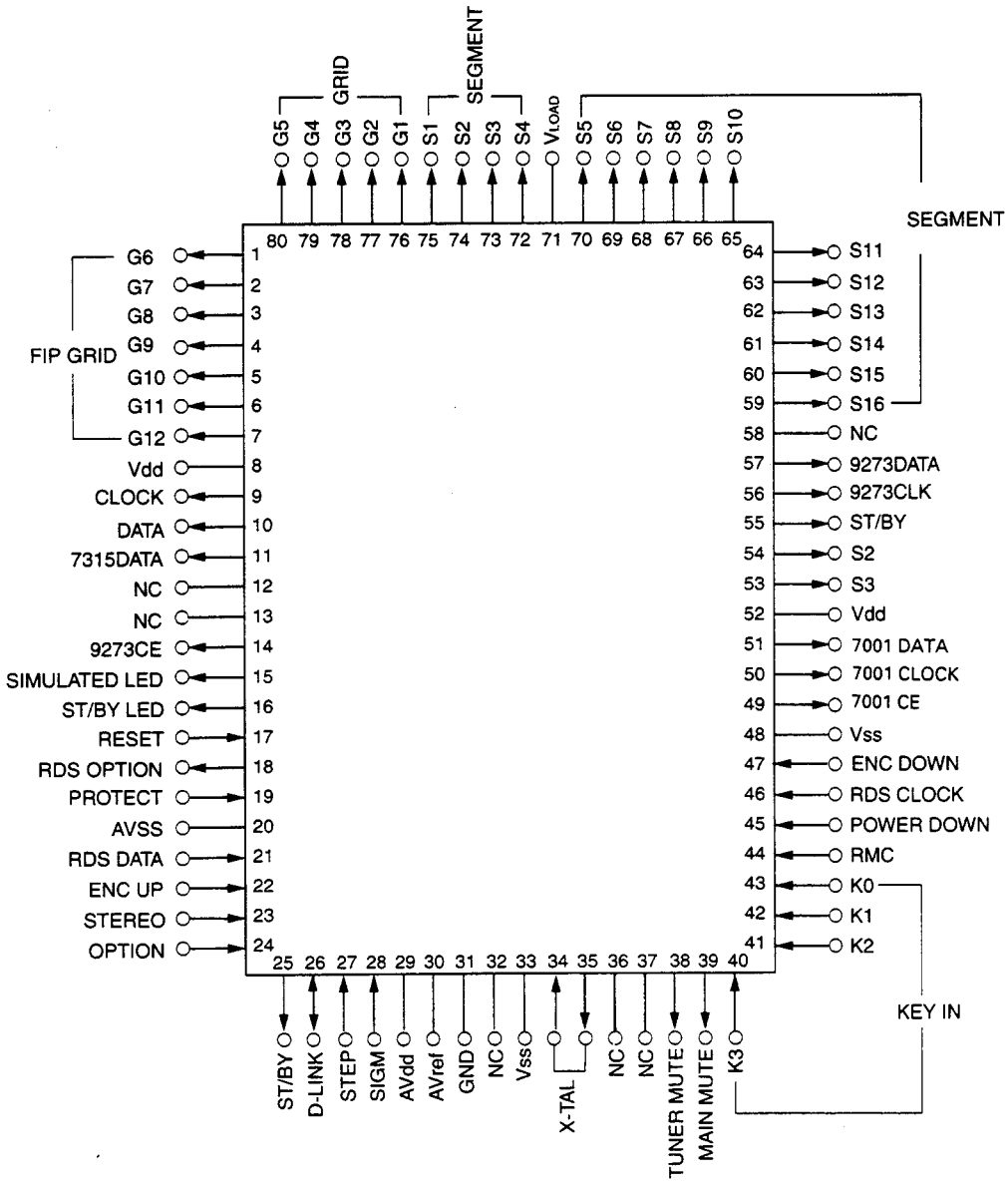
Model No. : RX-2060R/RDS



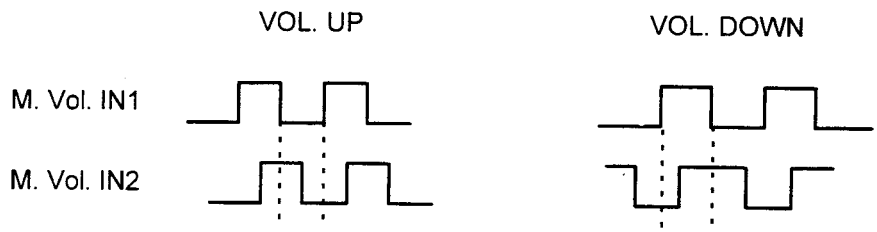
CIRCUIT DESCRIPTION

IC301 : μPD 78043AGF-209-3B9

1. Pin Description

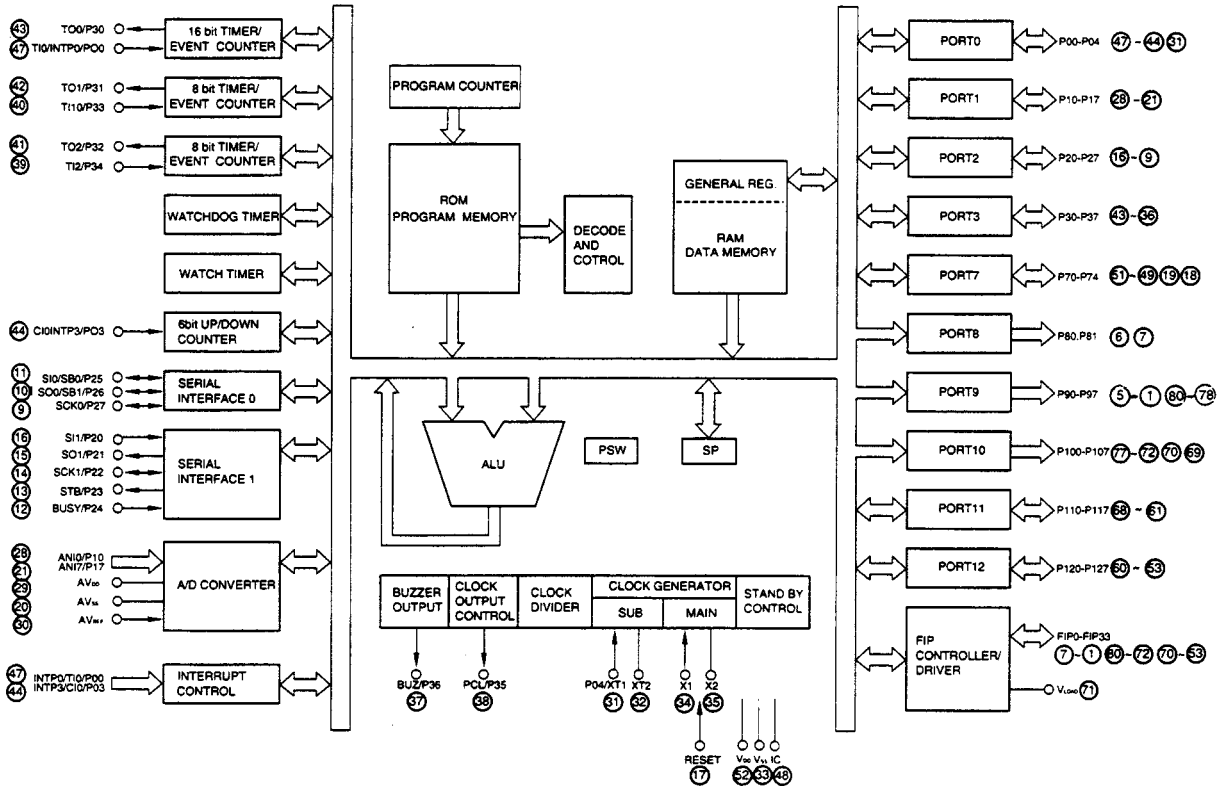


2. Input & Output Terminal Functions

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1~7</td><td>G6~G12</td><td>Grid signal output for FIP.</td></tr>
<tr><td>8</td><td>Vdd</td><td>+5V power supply.</td></tr>
<tr><td>9</td><td>CLK</td><td>Output, clock signal to TC9273, NJW1102, NJU9702 and TDA7315.</td></tr>
<tr><td>10</td><td>DATA</td><td>Output, data signal to TC9273, NJW1102 and NJU9702.</td></tr>
<tr><td>11</td><td>7315 DATA</td><td>Output, data signal to TDA7315.</td></tr>
<tr><td>12</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>13</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>14</td><td>9273 CE</td><td>Chip enable output for TC9273.</td></tr>
<tr><td>15</td><td>SIMULATED LED</td><td>Each time the simulated button is pressed, the "SIMULATED LED" light on or off.</td></tr>
<tr><td>16</td><td>ST/BY LED</td><td>Output for driving STAND BY LED.(At "H", it is active)</td></tr>
<tr><td>17</td><td>RESET</td><td>Input for resetting CPU.(At "H", it is active)</td></tr>
<tr><td>18</td><td>RDS OPTION</td><td>Control output for RDS mode.(This output is used only for R125RDS)</td></tr>
<tr><td>19</td><td>PROTECT</td><td>Signal input for protection.
When "L" is input, it is changed to STAND BY mode.</td></tr>
<tr><td>20</td><td>AVss</td><td>This pin provides the ground potential.</td></tr>
<tr><td>21</td><td>RDS DATA</td><td>RDS data input of TDA7330BD.(This input is used only for R125RDS)</td></tr>
<tr><td>22/47</td><td>ENC UP/DOWN</td><td>Input for main volume up and down.
 
</td></tr>
<tr><td>23</td><td>STEREO</td><td>Input for lighting the "STEREO" indicator.(At "L", it is active)</td></tr>
<tr><td>24</td><td>OPTION</td><td>Input for selecting RX2060R/RX2060RDS.</td></tr>
<tr><td>25</td><td>ST/BY</td><td>When the power is on, control data output is "H".
When the power is off, control data output is "L".</td></tr>
<tr><td>26</td><td>D-LINK</td><td>Input/Output for controlling digi-link |||.</td></tr>
<tr><td>27</td><td>STEP</td><td>According to region, input for selecting the frequency bands and steps and FM and AM
Settings are as follows
<table>
<tr><th>REGION</th><th>FREQUENCY BAND</th><th>STEP</th><th>PIN21(IC301)</th></tr>
<tr><td>EUROPE</td><td>FM: 87.5~108 MHz</td><td>50 kHz</td><td></td></tr>
<tr><td></td><td>AM: 522~1611 kHz</td><td>9 kHz</td><td>2.5 V</td></tr>
</table></td></tr>
<tr><td>28</td><td>SIGM</td><td>Input signal of FM.</td></tr>
<tr><td>29</td><td>AVdd</td><td>Power supply of analog A/D converter.</td></tr>
<tr><td>30</td><td>AVref</td><td>Referance voltage of analog A/D converter.</td></tr>
<tr><td>31</td><td>GND</td><td>Ground</td></tr>
<tr><td>32</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>33</td><td>Vss</td><td>This pin provides the ground potential.</td></tr>
<tr><td>34/35</td><td>X-TAL</td><td>Input/Output for crystal oscilator.</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>36</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>37</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>38</td><td>TUNER
MUTE</td><td>Output for tuner mute.
Output is high level under the following conditions.
1. When power is turned on or off.
2. When tuner band is changed.
3. When tuning up or down button is pressed.
4. When preset button is pressed.
5. When displayed preset number is changed during memory scan.
6. When "L" is inputed to "PROTECTION" of CPU.
7. When "-∞ mute signal" is received from the commander.</td></tr>
<tr><td>39</td><td>MAIN
MUTE</td><td>Output for main mute.
Output is low level under the following conditions.
1. When power is turned on or off.
2. When function is changed.
3. When MONO or STEREO is changed.
4. When "L" is inputed to "PROTECTION" of CPU.
5. When "-∞ mute signal" is received from the commander.
6. When encoder volume is minimum level.</td></tr>
<tr><td>40~43</td><td>KEY IN3~0</td><td>Input data of $K_3 \sim K_0$ for key scan.</td></tr>
<tr><td>44</td><td>RMC</td><td>Input for remote control signal.(At "L", it is active)</td></tr>
<tr><td>45</td><td>PWR DN</td><td>Input for power down.(At "L", it is active)</td></tr>
<tr><td>46</td><td>RDS CLOCK</td><td>RDS clock signal input for TDA7330B.(This input is used only for R125RDS)</td></tr>
<tr><td>48</td><td>Vss</td><td>Ground</td></tr>
<tr><td>49</td><td>7001 CE</td><td>Chip enable output for LM7001.</td></tr>
<tr><td>50/51</td><td>7001 CLK/DATA</td><td>CLOCK/DATA signal output for LM7001.</td></tr>
<tr><td>52</td><td>Vdd</td><td>+5V power supply.</td></tr>
<tr><td>53/54</td><td>S3/S2</td><td>Output to select the video signal VCR1 or VCR2.
Output data for each mode is as follows.
<table>
<tr><th>MODE</th><th>S2</th><th>S3</th><th>REMARKS</th></tr>
<tr><td>VCR1</td><td>L</td><td>H</td><td>Initial settings</td></tr>
<tr><td>VCR2</td><td>H</td><td>L</td><td></td></tr>
<tr><td>OTHERS</td><td>△</td><td>△</td><td>△: Previous state</td></tr>
</table>
* Last memory function is available</td></tr>
<tr><td>55</td><td>ST/BY</td><td>When the power is on, control data output is "H".
When the power is off, control data output is "L" and last memory is activated.</td></tr>
<tr><td>56/57</td><td>9273 CLK/DATA</td><td>Output, clock/data signal to TC9273.</td></tr>
<tr><td>58</td><td>NC</td><td>Not Used !</td></tr>
<tr><td>59/60</td><td>SEG 16/15</td><td>Segment signal output for FIP.</td></tr>
<tr><td>61~68</td><td>SEG14~7</td><td>Segment signal output for FIP and key scan.</td></tr>
<tr><td>71</td><td>Vload</td><td>-30V Power supply for FIP.</td></tr>
<tr><td>69~75</td><td>SEG6~1</td><td>Segment signal output for FIP.</td></tr>
<tr><td>76~80</td><td>GRID1~5</td><td>Grid signal output for FIP.</td></tr>
</table>

3. Block Diagram



4. Key Matrix

	KSCAN0 PIN 61	KSCAN1 PIN 62	KSCAN2 PIN 63	KSCAN3 PIN 64	KSCAN4 PIN 65	KSCAN5 PIN 66	KSCAN6 PIN 67	KSCAN7 PIN 68
KEY IN0 PIN 43	DISPLAY					MEMORY	MODE	FM MODE
KEY IN1 PIN 42	RDS			TV/AUX	BASS (△)	BASS (▽)	BALANCE (△)	BALANCE (▽)
KEY IN2 PIN 41	AF	PHONO	FM	POWER	TREBLE (△)	TREBLE (▽)	TUNNING (△)	TUNNING (▽)
KEY IN3 PIN 40	PTY	AM		TAPE MON	CD		VCR2	VCR1

ALIGNMENT PROCEDURES

TUNER

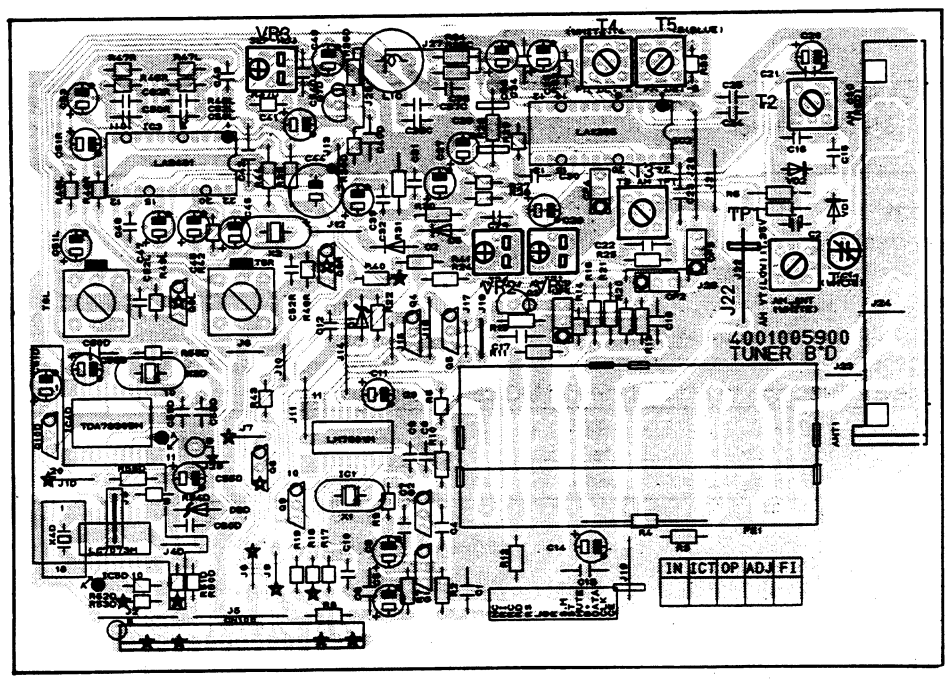
1. Equipment Required

- AM Standard Signal Generator (AM SSG)
- Oscilloscope
- AC Voltmeter
- FM Standard Signal Generator (FM SSG)
- Stereo Modulator
- Audio Generator
- Distortion Meter
- DC Voltmeter
- Frequency Counter

Note : Disconnect external FM antenna prior to alignment.

2. Alignment

2-1. Alignment and Test Point



2-2. AM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator modulation : 30 %
- RF signal frequency : 400 Hz
- Switch : Press the BAND button to AM

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	Tuning Voltage	522kHz	522kHz 1)	DC Volt meter to J22 (TP1)	T2 AM OSC(R)	DC1.2V±0.2V
2	RF Tuning	594 kHz	594 kHz 1)	AC voltmeter and oscilloscope to speaker terminal of L or R channel	T1 MW ANT(W)	Maximize audio output
		1404 kHz	1404 kHz 2)		TC1	
		* Feed signal should be fed to loop antenna through the test loop antenna 60 cm distant from the appliance. * Repeat the step 1) and 2) until no further improvement occurs.				

3	IF	999kHz	999kHz	IF genescope to speaker terminal of L or R channel	T3 AM IFT	Symmetrical curve on AM IF genescope
4	Tuned Level	999kHz 800 μV/m	999kHz		VR1	"Tuned" flag in the FL display light on

2-3. FM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator deviation : 40 kHz
- RF signal frequency : 1 kHz
- Switch : Press the BAND button to FM and the FM MODE button to MONO

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	Tuning Band Widt	98.0 MHz	98.0 MHz	DC Volt meter to R26(PCB1)	T4	Zero reading on DC Volt meter
2	THD	98.0 MHz	98.0 MHz	Distortion meter to TAPE OUT jack of L or R channel	T5	Minimize distortion
3	Tuned Level	98.0 MHz SSG output level : 10 μV/m	98.0 MHz		VR2	"Tuned" flag in the FL display light on

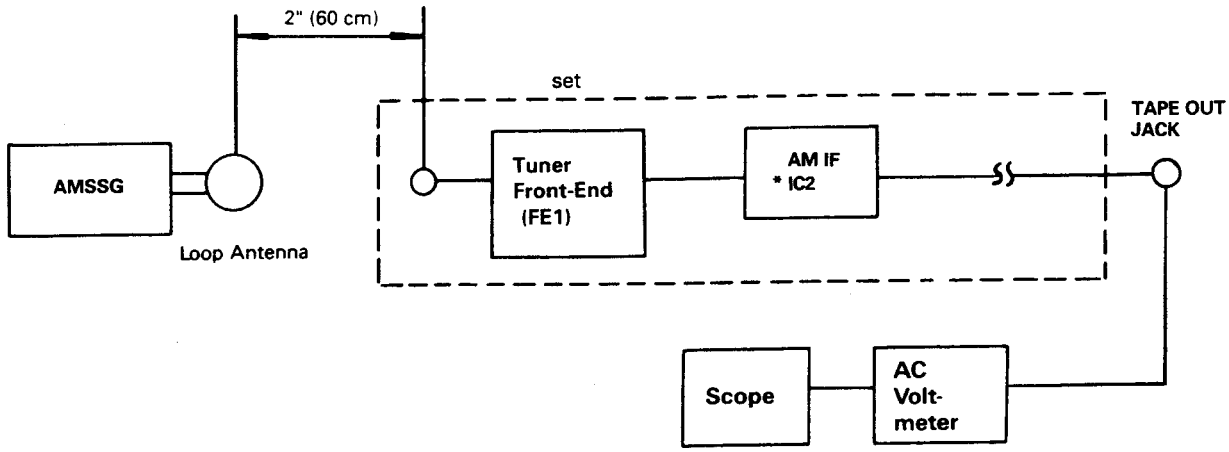
2-4. MPX Alignment

- Signal generator frequency : 98 MHz
- Signal generator deviation : 40 kHz
- RF signal frequency : 1 kHz
- Signal generator output level : 1000 μV/m
- Connect signal generator to FM antenna terminal through FM dummy antenna (75 Ω)
- Switch : Press the BAND button to FM and the FM MODE button to STEREO

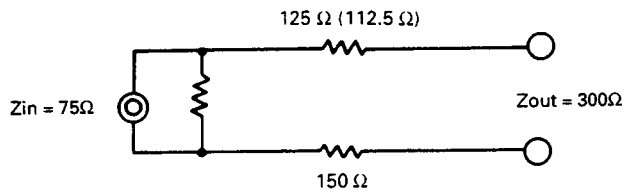
Step	Subject	19 kHz Modulation Level	Signal Generator Setting	Equipment Connection	Adjustment Point	Adjust for
1	Seperation R → L	8 % Modulation	Pilot on	AC voltmeter to speaker terminal of R channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of L channel		AC voltmeter reading should be at least 20 dB below
2	Seperation L → R	8 % Modulation	Pilot on	AC voltmeter to speaker terminal of L channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of R channel		AC voltmeter reading should be at least 20 dB below
If you could not obtain -20 dB readings in steps 1 and 2, readjust VR3 until you abtain -20 dB readings for both steps 3 and 4. Norminal is -25 dB.						

3. Equipment Connection

3-1. AM Alignment Connection

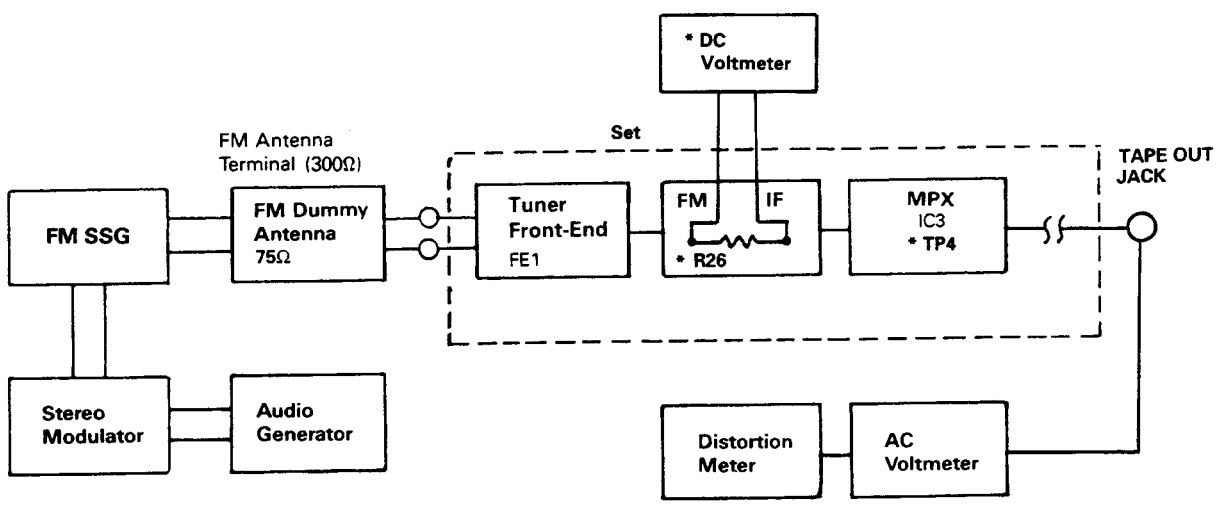


3-2. FM Dummy Antenna



FM Dummy Antenna to 300Ω Antenna terminal of system.

3-3. FM RF/IF and MPX Alignment Connection



TROUBLESHOOTING

Symptom	Cause and Remedy
Receiver inoperative. (FL indicator does not light.)	A) Faulty AC power cord. Replace. B) Defectve the power switch. Replace. C) Broken wire in the power transformer. Replace the power transformer. D) Blown fuse. Replace the fuse.
Fuse blows when power is turned on.	A) Defective power transformer. Replace. B) Short on the primary or secondary of the transformer circuitry. Repair the short. C) Damaged rectifier D120 or damaged transistor Q109. Replace the defective component(s). D) Short circuit in the amplifier circuit. Replace the shorted component(s) in the amplifier circuit.
Power indicator lights but no sound from both channels.	A) Defect in transistor Q210 L/R, Q205L/R on the Amp Board. Replace the defective component(s).
One channel does not work when volume is at maximum with a test signal applied to the center terminal of volume control of the dead channel.	A) Defect in transistors Q210 L/R, Q205 L/R on the Main Amp Board Locate and correct the defect. B) Break in copper foil of printed circuit board. Repair the trace. C) Short in speaker output terminal. Repair or replace.
Speaker works normally but headphones inoperative.	A) Headphone plug does not mate with jack. Replace the jack. B) Defective resistor R161L/R. Replace.
FM inoperative	A) Defective front-end (FE). Replace. B) Defective FM switch. Replace the switch. C) Defective transistor Q3 and ICS (IC2,IC3). Replace the defective transistor or IC(s). D) Defective coil T4,T5. Replace the coil(s). E) Defective lead-in. Repair or replace the lead-in. F) Ceramic filters CFI,CF3 defective. Replace the defective ceramic filter(s). G) Defective controller circuit component. Replace.

Symptom	Cause and Remedy
Poor multiplex separation.	A) Improper adjustment. Readjust VR3. (Refer to MPX Alignment.) B) IC3 defective. Replace. C) Variable resistor VR3 defective. Replace the variable resistor.
STEREO indicator does not light.	A) Defective indicator in FL. Replace. B) Improper adjustment of VR2 of tuner board. Make readjustment. C) Defective IC2. Replace the defective component.
FM volume in sufficient.	A) If volume from both L and R channels is not loud enough : Front end section defective. Faulty IC2, Coil T4,T5. Defective C838 of Tuner Board. If sound of one channel is not loud enough: Defective VR3.
FM Mono has no effect.	A) Defective FM MODE switch. Replace.
AM inoperative.	A) Damaged IC2 of tuner board. Replace. B) Defective T1,T2,T3 or CF4 of Tuner Board. Replace the defective component(s). C) Defective AM switch. Replace. D) Defective varicap diodes VD1 Replace varicap diods(s). E) Damaged AM loop antenna. Repair or replace. F) Defective controller circuit component. Replace.
Bass control has no effect	A) Variable resistor BASS defective. Replace. B) Defective IC451. Replace the defective component(s).

Symptom	Cause and Remedy
Treble control has no effect.	A) Variable resistor TREBLE defective. B) Defective IC451. Replace the defective components(s).
Auto tune inoperative. (UP/DOWN)	A) Poor contact in Up/Down key. Repair or replace. B) Defective IC301. Replace. C) Defective tuner circuit components. Replace. D) In case of FM only, improper adjustment of FM front-end. Readjust.
Manual tune inoperative. (UP/DOWN) (AM or FM)	A) Poor contact in Up/Down key. Replace. B) Defective IC301. Replace.
Memory setting inoperative.	A) Poor contact in memory keys. Replace. B) Defective IC301. Replace the defective component.
FL inoperative.	A) FL defective. Replace. B) Defective IC301. Replace C) Defective X-TAL301. Replace.
Noisy volume control.	A) Defective encoder volume. Replace. B) Defective capacitors C303 or C304 Replace the defective capacitor(s).
Remote Control Unit inoperative.	A) Weak battery. Replace. B) Defective. Replace. C) Defective IC301 (CPU Board) Replace.

MECHANICAL PARTS LIST

REF. NO.	DESCRIPTION	PARTS NO.	Q'TY	REMARKS
	PACKAGE			
	BOX CARTON	049605257903	1	
	POLY BAG	9705001550	1	
	FILM SOFT PE	9715000120	1	
	CUSHION POLY	9722026610	1	
	ACCESSORIES			
	ANTENNA CORD FM	4348001110	1	
	COMMANDER ASS'Y	541810134011	1	
	MANUAL INSTRUCTION	9007018681	1	
	ANTENNA AM LOOP STAND TYPE	2608207360	1	
	CABINET & CHASSIS			
1	PANEL FRONT	048501040422	1	RX2060RDS
	PANEL FRONT	048501040421	1	RX2060R
2	BADGE, SHERWOOD	048535042011	1	
3	WINDOW DISPLAY	048553026712	1	RX2060RDS
	WINDOW DISPLAY	048553026711	1	RX2060R
4	DECORATION CAP(DUMMY)	048523013912	1	RX2060RDS
	DECORATION CAP(DUMMY)	048523014011	1	RX2060R
5	BUTTON, FUNCTION	048543073213	1	
6	KNOB, MAIN	8543061910	1	
7	BUTTON,TUNING	8543073510	1	
8	INDICATOR, LED	8555050310	1	
9	JACK, PHONE	4438005010	1	
10	SWITCH PUSH	4628043810	1	
11	BUTTON PUSH, SPEAKER	8545126210	1	
12	BRACKET, SWITCH	6505142910	1	
13	KNOB, POWER	8545126010	1	
14	SWITCH, ESB-8236V	4628055910	1	
15	HOLDER, FL	6043010210	1	
16	SWITCH, TACT	4658003710	25	
17	SWITCH ROTARY, ENCODER	4608400210	1	
18	HEATSINK POWER	7502009310	1	
19	CHASSIS MAIN	6121615410	1	
20	COVER TOP	6122100710	1	
21	FOOT	046033102511	2	
22	FOOT	6033102510	2	
23	SPACER	6705024310	3	
24	SPONGE	6715025310	2	
25	⚠ OUTLET AC	4448103610	1	
26	SPEAKER TERMINAL, 4P	4408109710	1	
27	JACK RCA, 2P	4438114910	1	
28	JACK RCA, 2P	4438111310	1	
29	JACK RCA, 4P	4438108110	2	
30	JACK RCA, 2P	4438111510	1	
31	ANTENNA TERMINAL	4408108220	1	RX2060RDS
	ANTENNA TERMINAL	4408108120	1	RX2060R
32	CHASSIS BACK	046102048251	1	RX2060RDS
	CHASSIS BACK	046102048252	1	RX2060R

REF. NO.	DESCRIPTION	PARTS NO.	Q'TY	REMARKS
33	STOPPER HOLDER	6518002310	1	
34	CORD AC POWER	4308000430	1	
35	GROUND TERMINAL	4408103720	1	
36	FELT	6735012410	1	
37	BUTTON RDS, 5KEY	8543073110	1	
	HARDWARE KIT			
S1-S22	SCREW, #B BTT3X8B	8179130083	22	
S23/S24	SCREW, #2 WPTC3X10B	8159230101	2	
S25-S28	SCREW, HEATSINK	8195000310	4	
S29-S36	SCREW, #B BTT3X8B	8179130083	8	
S37-S39	SCREW, #2 WPTC3X10B	8159230101	3	
S40-S43	SCREW, BSAM4X8B	8109440083	4	
S44	SCREW, #B BTT3X8B	8179130083	1	
S45-S47	SCREW, #2 BTC3X20Y	8109230201	3	
S48/S49	SCREW, #B WPTT3X6Y	8179230061	2	
S50-S56	SCREW, #B BTT3X8B	8179130083	7	
S57	SCREW GROUND	8155000710	1	
S58	SCREW, #B BTT3X8B	8179130083	1	
S59	SCREW GROUND	8155000710	1	
S60-S70	SCREW, #B BTT3X8B	8179130083	11	
S71-S74	SCREW, BSAM4X8B	8109440083	4	
S75/S76	SCREW, #B BTT3X8B	8179130083	2	
	MISCELLANEOUS			
PCB1	P.C.BOART TUNER	4001005900	1	
PCB2	P.C.BOARD MAIN	4001004400	1	
PCB3	P.C.BOARD FRONT	4001004500	1	
PCB4	P.C.BOARD HEADPHONE	4001004460	1	
PCB5	P.C.BOARD POWER SWITCH	4001004450	1	
PCB6	P.C.BOARD AMP	4001100300	1	
PCB7	P.C.BOARD INPUT	4005013000	1	
	⚠ POWER TRANSFORMER, 230V, 50Hz	2828101087		
	ASS'Y POSISTOR	052438000183	1	
	CARD CABLE, 33P, 200mm	4118633209	1	

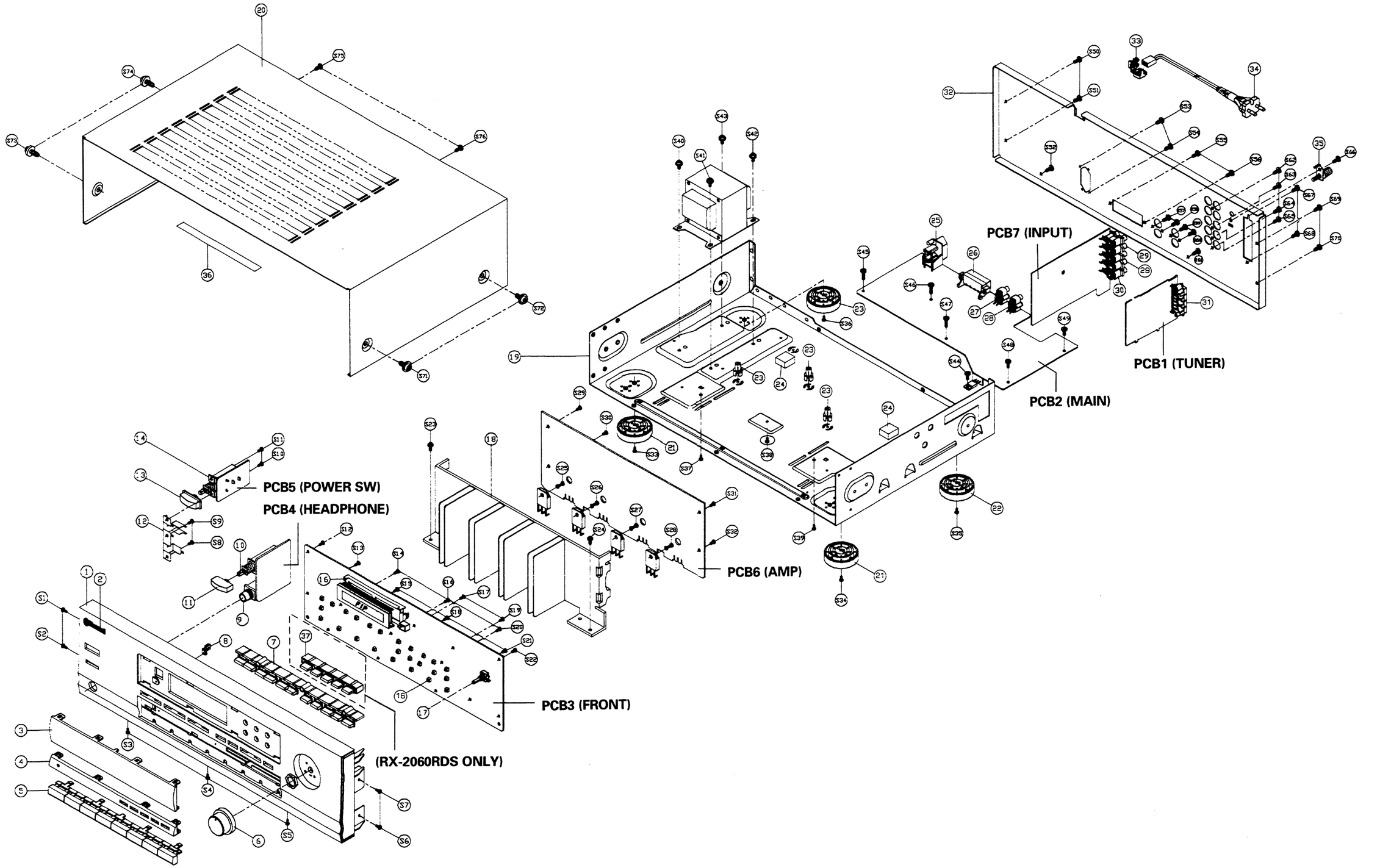
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list are of special significance to safety. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

EXPLODED VIEW

Model No. : RX-2060R/RDS

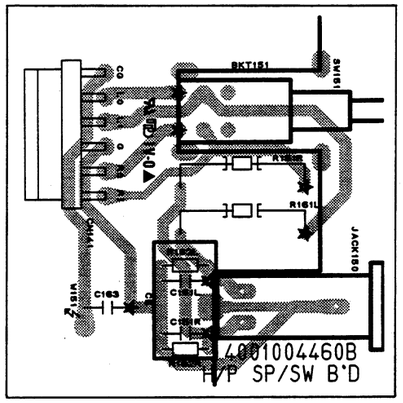
CABINET & CHASSIS



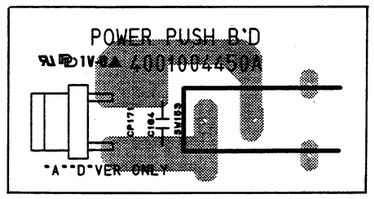
PRINTED CIRCUIT BOARDS

Model No. : RX-2060R/RDS

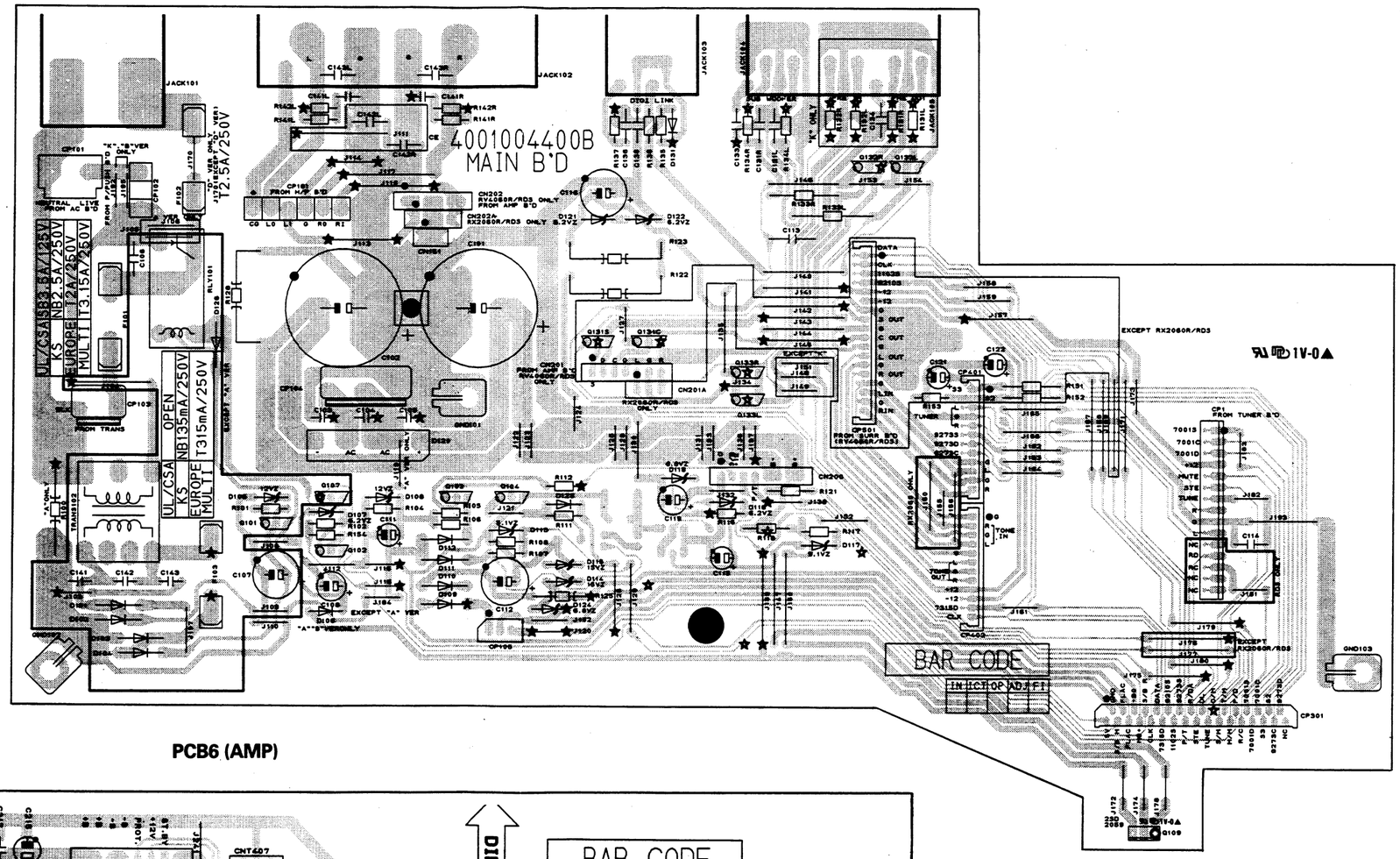
PCB4 (HEADPHONE)



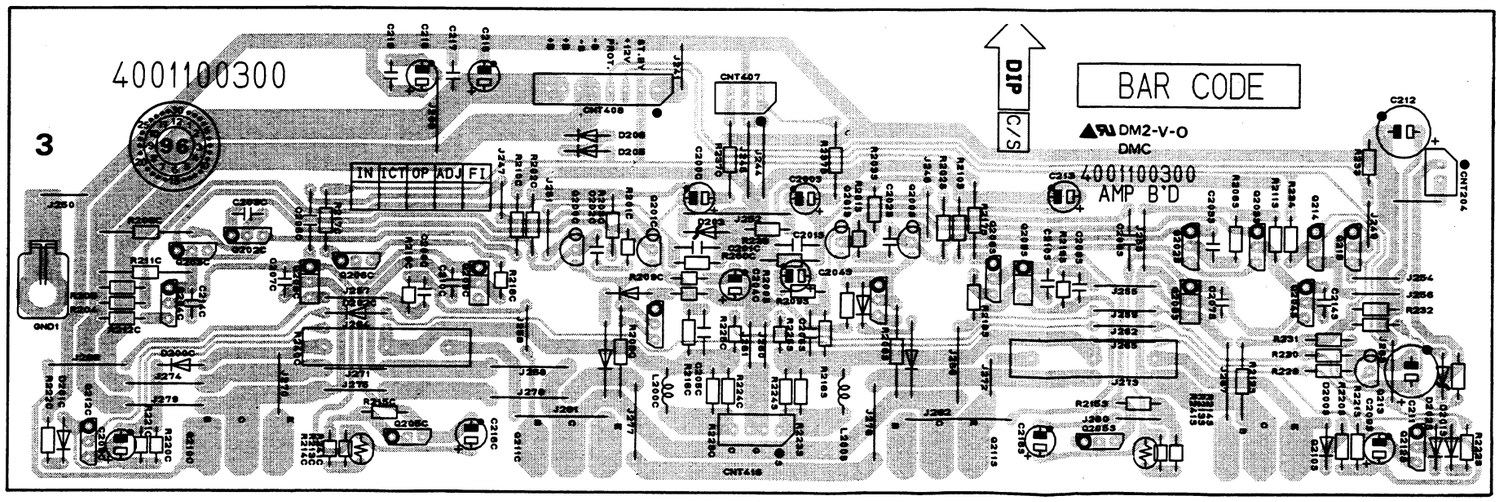
PCB5 (POWER SWITCH)



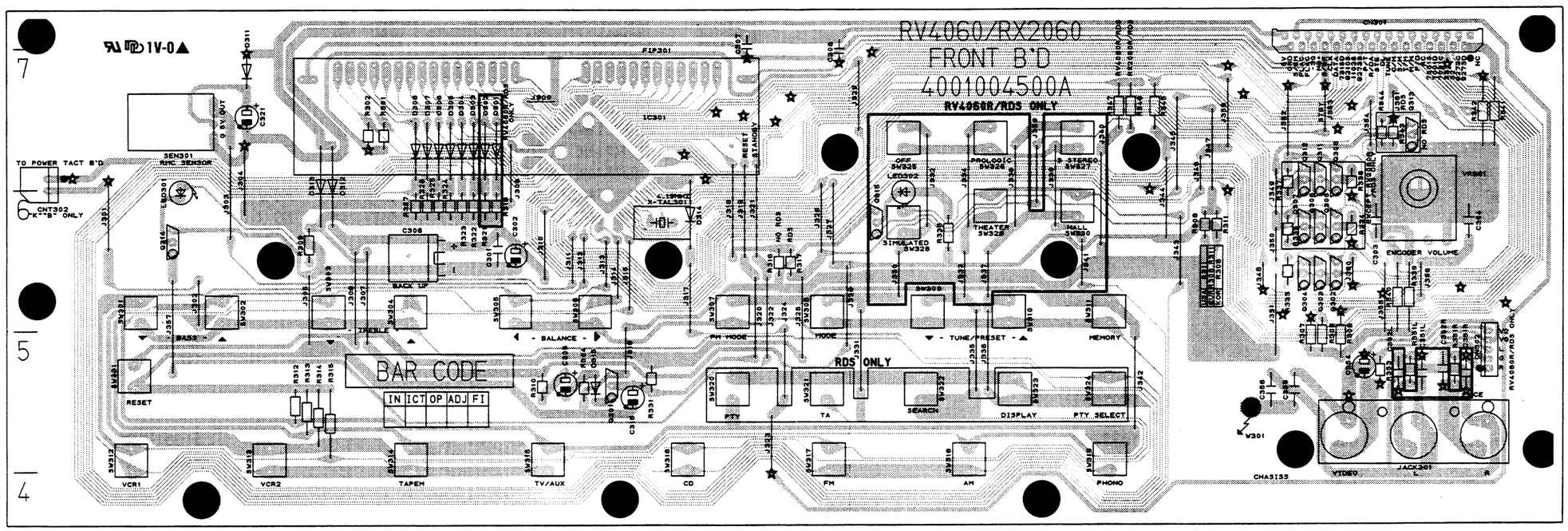
PCB2 (MAIN)



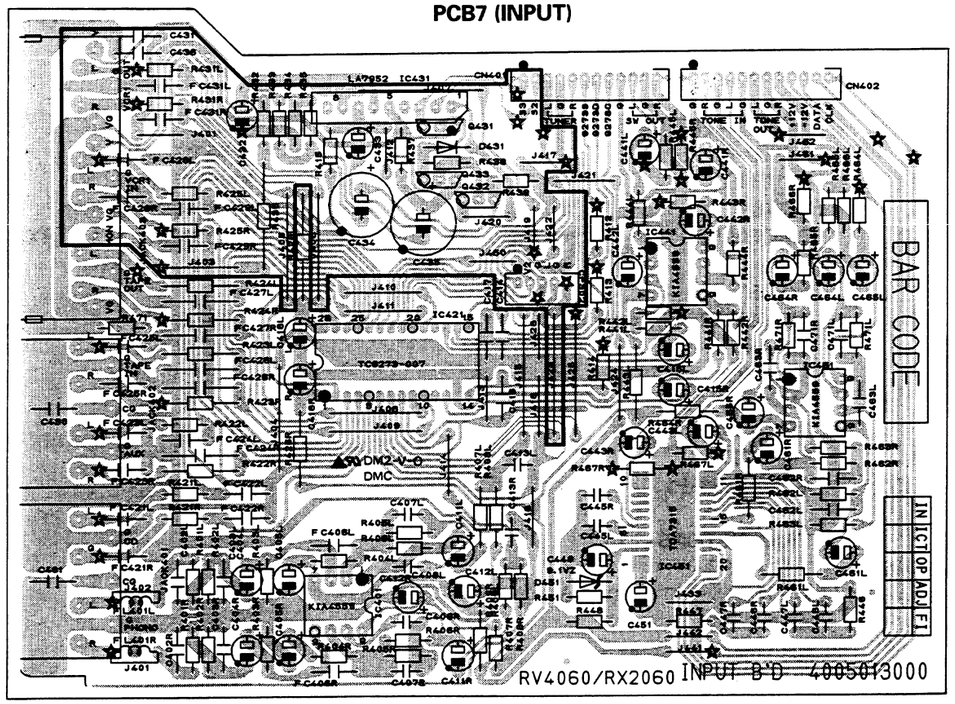
PCB6 (AMP)



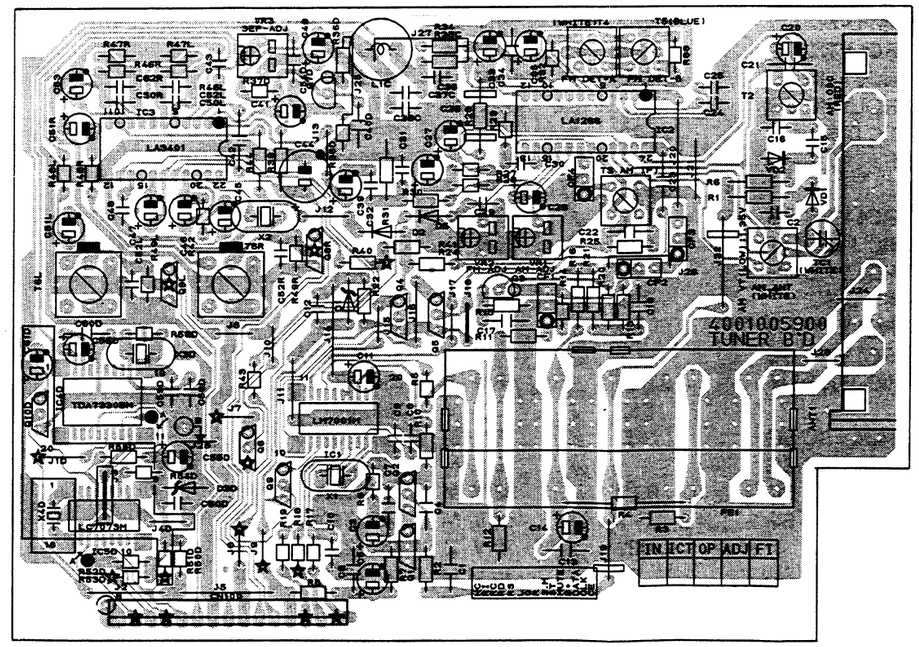
PCB3 (FRONT)



PCB7 (INPUT)



PCB1 (TUNER)



ELECTRICAL PARTS LIST

REF. NO.	DESCRIPTION				PARTS NO.	Q'TY	REMARKS

PRODUCT SAFETY NOTICE: Products marked with have special characteristics important to safety.
If you replace any of these components, read carefully the product notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor tolerance - D: (±0.5%), J: (±5%), K: (±10%), M: (±20%), Z: (+80, -20%)

PCB1	**ASSEMBLY P.C.BOARD TUNER**						
	CAPACITORS						
C1	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	1	
C2	CERAMIC DISC	0.047	µF	50 V Z	3579473530	1	
C3	ELECTROLYTIC SG	3.3	µF	50 V M	3479333971	1	
C4	CERAMIC TUBULAR	0.01	µF	16 V J	3519103915	1	
C5	ELECTROLYTIC SG	47	µF	16 V M	3479347031	1	
C6	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	1	
C7	CERAMIC TUBULAR	0.01	µF	16 V J	3519103915	1	
C8	CERAMIC DISC(CH)	18	pF	50 V J	3528180210	1	
C9	CERAMIC DISC(CH)	18	pF	50 V J	3528180210	1	
C10	CERAMIC DISC	100	pF	50 V J	3579101130	1	
C11	ELECTROLYTIC SG	47	µF	16 V M	3479347031	1	
C12	CERAMIC DISC	0.022	µF	50 V Z	3579223530	1	
C13	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	1	
C14	ELECTROLYTIC SG	100	µF	16 V M	3479310131	1	
C15	POLY	470	pF	50 V J	3615471110	1	
C16	CERAMIC DISC(CH)	15	pF	50 V J	3528150210	1	
C17/C18	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	2	
C20	ELECTROLYTIC SG	10	µF	35 V M	3479310061	1	
C21/C22	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	2	
C23	CERAMIC TUBULAR	0.01	µF	16 V J	3519103915	1	
C24/C25	CERAMIC DISC	0.022	µF	50 V Z	3579223530	2	
C26	ELECTROLYTIC SG	4.7	µF	50 V M	3479347971	1	
C27	ELECTROLYTIC SG	3.3	µF	50 V M	3479333971	1	
C28	ELECTROLYTIC SG	4.7	µF	50 V M	3479347971	1	
C29/C30	CERAMIC DISC	0.022	µF	50 V Z	3579223530	2	
C31	MYLAR	0.0033	µF	100 V J	3679332120	1	
C32	MYLAR	0.039	µF	100 V J	3679393120	1	
C33	ELECTROLYTIC SG	0.47	µF	50 V M	3479347871	1	
C34	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	1	
C35	ELECTROLYTIC SG	100	µF	16 V M	3479310131	1	
C36	CERAMIC DISC	330	pF	50 V J	3579331130	1	
C39	ELECTROLYTIC SG	10	µF	35 V M	3479310061	1	
C41	ELECTROLYTIC SG	2.2	µF	50 V M	3479322971	1	
C42	CERAMIC TUBULAR	0.047	µF	50 V J	3519473935	1	
C43	POLY	680	pF	50 V J	3615681110	1	
C44	ELECTROLYTIC SG	100	µF	16 V M	3479310131	1	
C45	ELECTROLYTIC SG	1	µF	50 V M	3479310971	1	
C46	ELECTROLYTIC SG	0.22	µF	50 V M	3479322871	1	
C47	ELECTROLYTIC SG	1	µF	50 V M	3479310971	1	
C48	CERAMIC DISC	0.022	µF	50 V Z	3579223530	1	
C49	ELECTROLYTIC SG	10	µF	35 V M	3479310061	1	
C53	ELECTROLYTIC SG	10	µF	35 V M	3479310061	1	
C37C	CERAMIC DISC	82	pF	50 V J	3579820130	1	

REF. NO.	DESCRIPTION				PARTS NO.	Q'TY	REMARKS
C38C	CERAMIC DISC	100	pF	50 V J	3579101130	1	
C40D	CERAMIC TUBULAR	0.022	µF	25 V J	3519223520	1	RX2060RDS
C50L/R	CERAMIC DISC	220	pF	50 V J	3579221130	2	
C51L/R	ELECTROLYTIC SG	10	µF	35 V M	3479310061	2	
C54D	CERAMIC TUBULAR	270	pF	50 V J	3519271935	1	RX2060RDS
C55D	ELECTROLYTIC SG	47	µF	16 V M	3479347031	1	RX2060RDS
C56D	ELECTROLYTIC SG	10	µF	35 V M	3479310061	1	RX2060RDS
C57D	CERAMIC TUBULAR	0.1	µF	50 V Z	3519104935	1	RX2060RDS
C58D	CERAMIC DISC	27	pF	50 V J	3579270130	1	RX2060RDS
C59D	CERAMIC DISC	27	pF	50 V J	3579270130	1	RX2060RDS
C60D	CERAMIC DISC	0.1	µF	50 V Z	3579104530	1	RX2060RDS
C62L/R	CERAMIC DISC	10	pF	50 V J	3579100130	2	
	CERAMIC FILTERS						
CF1	CERAMIC, SFE10.7MS3GH-AFT21				3978011011	1	
CF2	NOT USED !						
CF3	CERAMIC, SFE10.7MS3GH-AFT21				3978011011	1	
CF4	CERAMIC, CFN2-450BL				3908001080	1	
	CONNECTOR						
CN100	HOUSING, 35238-1010				4408100929	1	
(CN100)	WAFER, 15P				4428561520	1	RX2060RDS
	DIODES						
D1	ZENER, UZ 5.1BSB				2258599103	1	
D2	SWITCHING, 1N4148				2058322101	1	
D3D	ZENER, UZ 5.1BSB				2258599103	1	RX2060RDS
D5	NOT USED !						
VD1/VD2	VARECTER, SVC321C-2				2258817104	2	
	INTEGRATED CIRCUITS						
IC1	LM7001M				2138017136	1	
IC2	LA1266G				2168017128	1	
IC3	LA3401				2168417210	1	
IC4D	TDA7330BD				2138300213	1	RX2060R
	COILS						
L1C	INDUCTOR, 20.8 mH				2648601430	1	
T1	AM-ANT				2608201120	1	
T2	AM-OSC				2638201150	1	
T3	AM-IFT, P-7SB				2848001250	1	
T4	FM-DET-A				2628000100	1	
T5	FM-DET-B				2628000110	1	
T6L/R	MPX, 19/38kHz				2658001050	1	
	TRANSISTORS						
Q1/Q2	2SC1740S,NPN				2208622107	2	
Q3	KTC1923Y/BKTC3194Y, NPN				2208406103	1	
Q4	KRA107M/DTA114YS				2238006103	1	
Q6	KRA107M/DTA114YS				2238006103	1	
Q7D	2SC1740S,NPN				2208622107	1	RX2060RDS

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
Q8L/R	DTC323TS,NPN					2238422100	2	
Q9	KRA107M/DTA114YS					2238006103	1	
	RESISTORS							
R1	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R2	CARBON FILM	5.6	kohm	1/5 W	J	3069562970	1	
R3	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R4	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R5	METAL FILM	470	ohm	1/5 W	J	3029471970	1	
R6	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R7	METAL FILM	10	kohm	1/5 W	J	3069103970	1	
R8	METAL FILM	270	ohm	1/5 W	J	3029271970	1	
R9	METAL FILM	560	ohm	1/5 W	J	3029561970	1	
R10	METAL FILM	1	kohm	1/5 W	J	3029102970	1	
R11	METAL FILM	180	ohm	1/5 W	J	3029181970	1	
R12	METAL FILM	560	ohm	1/5 W	J	3029561970	1	
R13	METAL FILM	3.3	kohm	1/5 W	J	3029332970	1	
R14	METAL FILM	560	ohm	1/5 W	J	3029561970	1	
R15	METAL FILM	470	ohm	1/5 W	J	3029471970	1	
R16	METAL FILM	100	ohm	1/5 W	J	3029101970	1	
R17-R19	METAL FILM	1	kohm	1/5 W	J	3029102970	3	
R20	METAL FILM	330	ohm	1/5 W	J	3029331970	1	
R21	METAL FILM	270	ohm	1/5 W	J	3029271970	1	
R22	METAL FILM	330	ohm	1/5 W	J	3029331970	1	
R24	METAL FILM	4.7	kohm	1/5 W	J	3029472970	1	
R25	CARBON FILM	68	kohm	1/5 W	J	3069683970	1	
R26	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R27	METAL FILM	10	kohm	1/5 W	J	3069103970	1	
R28	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R29	METAL FILM	22	ohm	1/5 W	J	3029220970	1	
R30	METAL FILM	4.7	kohm	1/5 W	J	3029472970	1	
R31	METAL FILM	2.7	kohm	1/5 W	J	3029272970	1	
R32	CARBON FILM	6.8	kohm	1/5 W	J	3069682970	1	
R33	METAL FILM	3.3	kohm	1/5 W	J	3029332970	1	
R34	METAL FILM	68	ohm	1/5 W	J	3029680970	1	
R39	METAL FILM	68	ohm	1/5 W	J	3029680970	1	
R40	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R41	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R42	METAL FILM	3.3	kohm	1/5 W	J	3029332970	1	
R43	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R44	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R35C	METAL FILM	1.8	kohm	1/5 W	J	3029182970	1	
R36D	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	RX2060RDS
R37D	METAL FILM	22	ohm	1/5 W	J	3029220970	1	RX2060RDS
R38D	METAL FILM	1	kohm	1/5 W	J	3029102970	1	RX2060RDS
R46L/R	CARBON FILM	220	kohm	1/5 W	J	3069224970	2	
R47L/R	CARBON FILM	270	kohm	1/5 W	J	3069274970	2	
R48L/R	METAL FILM	2.7	kohm	1/5 W	J	3029272970	2	
R49L/R	METAL FILM	3.3	kohm	1/5 W	J	3029332970	2	
R50D	METAL FILM	470	ohm	1/5 W	J	3029471970	1	RX2060RDS
R52D	METAL FILM	10	kohm	1/5 W	J	3069103970	1	RX2060RDS
R53D	METAL FILM	10	kohm	1/5 W	J	3069103970	1	RX2060RDS
R56D	CARBON FILM	2.2	Mohm	1/5 W	J	3069225970	1	RX2060RDS

REF. NO.	DESCRIPTION				PARTS NO.	Q'TY	REMARKS
	SEMI FIXED VAREABLE RESISTORS						
VR1	5K(B)-H				3248050243	1	
VR2	EVN-DJAA03B54, 50 k(B)				3248050343	1	
VR3	200K(B)-H				3248020443	1	
	MISCELLANEOUS						
TC1	TRIMMER, 10 pF				3838001010	1	
FE1	FM TUNER, FTA4-406H				3928101870	1	
X1	X-TAL, HC49U T7.2MHZ				3938223003	1	
X2	RESONATOR, CSB456F11				3938001009	1	
X3D	X4M332				3938201920	1	RX2060RDS
31	ANTENNA TERMINAL				4408108220	1	
PCB2	**ASSEMBLY P.C.BOARD MAIN**						
	CAPACITORS						
C101/C102	ELECTROLYTIC HS	4700	μF	50 V M	3419547225	2	
C103-C105	MYLAR	0.1	μF	250 V K	3679104257	3	
C106	CERAMIC DISC	0.0047	μF	250 V Z	3549472108	1	
C107	ELECTROLYTIC SG	220	μF	35 V M	3409322169	1	
C108	ELECTROLYTIC SG	220	μF	16 V M	3479322131	1	
C111	ELECTROLYTIC SG	47	μF	25 V M	3479347041	1	
C112	ELECTROLYTIC SG	100	μF	50 V M	3479310171	1	
C115	ELECTROLYTIC SG	22	μF	16 V M	3479322031	1	
C116	ELECTROLYTIC SG	220	μF	16 V M	3479322131	1	
C119	ELECTROLYTIC SG	100	μF	16 V M	3479310131	1	
C131L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C134	CERAMIC TUBULAR	0.1	μF	50 V Z	3519104935	1	
C135	CERAMIC TUBULAR	270	pF	50 V J	3519271935	1	
C136	CERAMIC TUBULAR	0.1	μF	50 V Z	3519104935	1	
C141	MYLAR	0.1	μF	250 V K	3679104257	1	
C141L/R	MYLAR	0.047	μF	100 V J	3679473120	2	
C142	MYLAR	0.1	μF	250 V K	3679104257	1	
C142L/R	CERAMIC TUBULAR	0.0047	μF	16 V J	3519472915	2	
C143	MYLAR	0.1	μF	250 V K	3679104257	1	
C143L/R	CERAMIC TUBULAR	0.0047	μF	16 V J	3519472915	2	
	CONNECTORS						
CP1	WAFER, 35337-1020				4438302960	1	
(CP1)	WAFER, 15P				4428551520	1	RX2060RDS
CN161	LEAD ASS'Y, 6P, 350mm				435006352166	1	
CN200	LEAD ASS'Y, 8P, 100mm				436108163321	1	
CN201	LEAD ASS'Y, 3P, 160mm				436103163321	1	
CN202	LEAD ASS'Y, 4P, 200mm				436104203701	1	
CP101	PLUG AC, GSCS-1301				4428100291	1	
CP102	LEAD ASS'Y, 2P, 350mm				435002352116	1	
CP103	PLUG, JE202B1T2				4428536102	1	
CP104	PLUG, JE202B1T3				4428536103	1	
CP105	PLUG, 5267-03P				4428505710	1	
CP301	PLUG, FFC-52045-33				4428509031	1	

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
CP401	PLUG, 35336-1210					4428851112	1	
CP402	PLUG, 35336-1210					4428851112	1	
	DIODES							
⚠ D101-D104	RECTIFIER, 1N4003					2258128002	4	
D105	ZENER, UZ 12.0BSC					2258599116	1	
D106	SWITCHING, 1N4148					2058322101	1	
D107	ZENER, UZ 6.2BSB					2258599105	1	
D108	ZENER, UZ 12.0BSC					2258599116	1	
⚠ D109-D112	RECTIFIER, 1N4003					2258128002	4	
D113	ZENER, UZ 5.1BSB					2258599103	1	
D114/D115	ZENER, UZ 15.0BSC					2258599109	2	
D116	ZENER, UZ 6.2BSB					2258599105	1	
D117	ZENER, UZ 9.1BSC					2258599107	1	
D118	ZENER, UZ 6.8BSC					2258599121	1	
⚠ D120	BRIDGE, D3BA60, 600V, 4A					2058100214	1	
D121/D122	ZENER, UZ 6.2BSB					2258599105	2	
D124	ZENER, UZ 6.8BSC					2258599121	1	
D125	SWITCHING, 1N4148					2058322101	1	
D126	RECTIFIER, 1N4003					2258128002	1	
D131	SWITCHING, 1N4148					2058322101	1	
	FUSES							
⚠ F101	5T, 2A, 250V					5508302435	1	
⚠ F102	5T, 2.5A, 250V					5508302535	1	
⚠ F103	TL, 315mA, 250V					5508301434	1	
	TRANSISTORS							
Q101/Q102	BKTC3199Y/2SC3199Y, NPN					2208610109	2	
Q103	DTA114YS, PNP					2208222105	1	
Q104	DTC114YS,NPN					2208622106	1	
Q107	DTC114YS,NPN					2208622106	1	
Q109	2SD2059Y/KTD2059Y, NPN					2028406123	1	
Q132L/R	DTC323TS,NPN					2238422100	2	
Q133L/R	DTC323TS,NPN					2238422100	2	
	RESISTORS							
R100	CARBON FILM	3.3	Mohm	1/5 W	J	3069335970	1	
R101	METAL FILM	2.2	kohm	1/5 W	J	3029222970	1	
R102	METAL FILM	1	kohm	1/5 W	J	3029102970	1	
R104	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R106	METAL FILM	150	ohm	1/5 W	J	3029151970	1	
R107	CARBON FILM	5.6	kohm	1/5 W	J	3069562970	1	
R108	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R111	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R112	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R113	METAL FILM	4.7	kohm	1/5 W	J	3029472970	1	
R116	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R117	METAL FILM	4.7	kohm	1/5 W	J	3029472970	1	
R118	METAL FILM	100	kohm	1/4W	J	3069109270	1	
R121	METAL FILM	4.7	kohm	1/5 W	J	3029472970	1	

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
R122	METAL FILM	680	ohm	2 W	J	3029681570	1	
R123	METAL FILM	470	ohm	2 W	J	3029471570	1	
R125	METAL FILM	330	ohm	1 W	J	3029331470	1	
R128	METAL FILM	2.2	kohm	2 W	J	3029222570	1	
R131L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R132L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R133L/R	METAL FILM	1.5	kohm	1/5 W	J	3029152970	2	
R134L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R135	CARBON FILM	22	kohm	1/5 W	J	3069223970	1	
R136	CARBON FILM	220	kohm	1/5 W	J	3069224970	1	
R137	METAL FILM	100	ohm	1/5 W	J	3029101970	1	
R141L/R	METAL FILM	22	ohm	1/5 W	J	3029220970	2	
R142L/R	METAL FILM	22	ohm	1/5 W	J	3029220970	2	
R154	METAL FILM	47	ohm	1/5 W	J	3029470970	1	
	MISCELLANEOUS							
⚠ RLY101	RELAY, HR-CR7, DC12V					5528042001	1	
⚠ TRANS102	ST/BY TRANS FORMER, 230V 50Hz					2828101291	1	
⚠ 25	OUTLET AC					4448103610	1	
26	SPEAKER TERMINAL, 4P					4408109710	1	
27	JACK RCA, 2P					4438114910	1	
28	JACK RCA, 2P					4438111310	1	
	TERMINAL GROUND					4235007310	3	
	FUSE CLIP					4255001010	6	
PCB3	**ASSEMBLY P.C.BOARD FRONT**							
	CAPACITORS							
C301	CERAMIC TUBULAR	100	pF	50 V	J	3519101935	1	
C302	ELECTROLYTIC SG	47	μF	16 V	M	3479347031	1	
C303/C304	CERAMIC TUBULAR	100	pF	50 V	J	3519101935	2	
C305	ELECTROLYTIC SG	10	μF	50 V	M	3479310071	1	
C306	ELECTROLYTIC	0.047	F	5.5 V	M	3438247315	1	
C307/C308	MYLAR	0.047	μF	100 V	J	3679473120	2	
C315	ELECTROLYTIC SG	1	μF	50 V	M	3479310971	1	
C321	ELECTROLYTIC SG	10	μF	50 V	M	3479310071	1	
	CONNECTORS							
CN301	PLUG, FFC-52045-33					4428509031	1	
	DIODES							
D303-D308	SWITCHING, 1N4148					2058322101	6	
D311-D315	SWITCHING, 1N4148					2058322101	5	
LED301	LED, SLR-34URCN49					2381215704	1	
	INTEGRATED CIRCUIT							
IC301	UPD78043AGF-209-3B9					2139313117	1	
	TRANSISTORS							
Q301	BKTC3199Y/2SC3199Y, NPN					2208610109	1	
Q302	DTA114YS, PNP					2208222105	1	

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
Q303/Q304	DTC114YS,NPN					2208622106	2	
Q313/Q314	DTC114TS,NPN					2208622108	2	
	RESISTORS							
R301/R302	METAL FILM	100	kohm	1/5 W	J	3069104970	2	
R304	METAL FILM	10	kohm	1/5 W	J	3069103970	1	
R305-R308	METAL FILM	100	kohm	1/5 W	J	3069104970	4	
R309	METAL FILM	180	ohm	1/5 W	J	3029181970	1	
R310	METAL FILM	330	ohm	1/5 W	J	3029331970	1	
R311	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R312-R315	METAL FILM	4.7	kohm	1/5 W	J	3029472970	4	
R316	METAL FILM	100	kohm	1/5 W	J	3069104970	1	RX2060R
R317	METAL FILM	100	kohm	1/5 W	J	3069104970	1	RX2060RDS
R322-R327	METAL FILM	100	kohm	1/5 W	J	3069104970	6	
R331	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R333	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R339/R340	CARBON FILM	68	kohm	1/5 W	J	3069683970	2	
R341/R342	METAL FILM	10	kohm	1/5 W	J	3069103970	2	
R343/R344	METAL FILM	4.7	kohm	1/5 W	J	3029472970	2	
R345/R346	METAL FILM	100	kohm	1/5 W	J	3069104970	2	
	MISCELLANEOUS							
SEN301	RMC MODULE, CRV1G342-185BD					2408000180	1	
X-TAL301	CST4M19					3938124006	1	
FIP301	FL DISPLAY, CM1477C					2328140900	1	
15	HOLDER, FL					6043010210	1	
16	SWITCH, TACT					4658003710	25	
17	SWITCH ROTARY, ENCODER					4608400210	1	
PCB4	**ASSEMBLY P.C.BOARD HEADPHONE**							
C161L/R	CAP, CERAMIC TUBULAR	560	pF	50 V	J	3519561935	2	
C163	CAP, CERAMIC TUBULAR	0.1	μF	50 V	Z	3519104935	1	
CP161	CNT, PLUG, JE202A2T6					4428536206	1	
R161L/R	RES, METAL FILM	470	ohm	2 W	J	3029471570	2	
R162L/R	RES, METAL FILM	100	kohm	1/5 W	J	3069153970	2	
9	JACK, PHONE					4438005010	1	
10	SWITCH PUSH					4628043810	1	
PCB5	**ASSEMBLY P.C.BOARD POWER SWITCH**							
CP171	CNT, WAFER, 2P					4428536202	1	
⚠ 14	SWITCH, ESB-8236V					4628055910	1	
PCB6	**ASSEMBLY P.C.BOARD AMP**							
	CAPACITORS							
C200C/S	ELECTROLYTIC SG	4.7	μF	50 V	M	3479347971	2	
C201C/S	CERAMIC TUBULAR	470	pF	50 V	J	3519471935	2	
C202C/S	CERAMIC DISC	0.022	μF	50 V	Z	3579222530	2	
C203C/S	CERAMIC DISC	27	pF	50 V	J	3579270130	2	

REF. NO.	DESCRIPTION				PARTS NO.	Q'TY	REMARKS
C204C/S	ELECTROLYTIC SG	47	μF	16 V M	3479347031	2	
C205C/S	NOT USED !						
C206C/S	CERAMIC TUBULAR	5.6	pF	50 V J	3519056935	2	
C207C/S	CERAMIC DISC	220	pF	50 V J	3579221130	2	
C208C/S	MYLAR	0.047	μF	100 V J	3679473120	2	
C209C/S	ELECTROLYTIC SG	10	μF	35 V M	3479310061	2	
C210C/S	CERAMIC DISC	220	pF	50 V J	3579221130	2	
C211	ELECTROLYTIC SG	100	μF	25 V M	3479310141	1	
C212	ELECTROLYTIC AU	470	μF	6.3 V M	3479547119	1	
C213	ELECTROLYTIC SG	10	μF	35 V M	3479310061	1	
C214C/S	CERAMIC DISC	8	pF	50 V J	3579809030	2	
C215	ELECTROLYTIC SG	1	μF	100 V M	3479310991	1	
C217	MYLAR	0.22	μF	63 V K	3679224297	1	
C218	ELECTROLYTIC SG	1	μF	100 V M	3479310991	1	
C219	MYLAR	0.22	μF	63 V K	3679224297	1	
C221	ELECTROLYTIC SG	22	μF	50 V M	3479322071	1	
	CONNECTORS						
CNT416	PLUG, 5267-04P				4428505610	1	
CNT408	PLUG, 5267-08A				4428505510	1	
CNT407	PLUG, 5267-03P				4428505710	1	
CNT204	PLUG, 5267-02A				4428508210	1	
	DIODES						
D200C/S	SWITCHING, 1N4148				2058322101	2	
D201C/S	SWITCHING, 1N4148				2058322101	2	
D202C/S	SWITCHING, 1N4148				2058322101	2	
D203	ZENER, UZ 27.0 BSC				2258599115	1	
D205/D206	SWITCHING, 1N4148				2058322101	2	
D207	ZENER, UZ 7.5BSC				2258599130	1	
	COILS						
L200C/S	INDUCTOR, O.5 uH				2648001010	2	
	TRANSISTORS						
Q200C/S	KTC2240BL/BKTC3200, NPN				2208606108	2	
Q201C/S	KTC2240BL/BKTC3200, NPN				2208606108	2	
Q202C/S	2SC1740S,NPN				2208622107	2	
Q203C/S	2SC1740S,NPN				2208622107	2	
Q204C/S	KTA1024, PNP				2208206102	2	
Q205C/S	2SC1740S,NPN				2208622107	2	
Q206C/S	KTC3206Y, NPN				2208606118	2	
Q208C/S	KSC2690A-Y				2008602102	2	
Q209C/S	KSA1220A-Y				2008202101	2	
⚠ Q210C/S	2SC3853, NPN				2028416108	2	
⚠ Q211C/S	2SA1489, PNP				2028116105	2	
Q212C/S	2SC1740S,NPN				2208622107	2	
Q213	KTA1015Y/BKTA1266, PNP				2208206105	1	
Q214/Q215	2SC1740S,NPN				2208622107	2	
	RESISTORS						

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
R200C/S	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R201C/S	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R202C/S	METAL FILM	3.3	kohm	1/5 W	J	3029332970	2	
R203C/S	METAL FILM	3.3	kohm	1/5 W	J	3029332970	2	
R204/R205	METAL FILM	4.7	kohm	1/5 W	J	3029472970	2	
R206C/S	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R208C/S	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R209C/S	METAL FILM	2.4	kohm	1/5 W	J	3029242970	2	
R210C/S	METAL FILM	10	kohm	1/5 W	J	3069103970	2	
R211C/S	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R212C/S	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R213C/S	METAL FILM	680	ohm	1/5 W	J	3029681970	2	
R214C/S	METAL FILM	1.8	kohm	1/5 W	J	3029182970	2	
R215C/S	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R216C/S	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R217C/S	METAL FILM	330	ohm	1/5 W	J	3029331970	2	
R218C/S	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R219C/S	METAL FILM	220	ohm	1/5 W	J	3029221970	2	
R220C/S	METAL FILM	390	ohm	1/5 W	J	3029391970	2	
R221C/S	METAL FILM	4.7	kohm	1/5 W	J	3029472970	2	
R222C/S	METAL FILM	100	kohm	1/5 W	J	3069153970	2	
R223C/S	METAL FILM	22	ohm	1/5 W	J	3029220970	2	
R224C/S	METAL FILM	22	ohm	1/5 W	J	3029220970	2	
R225C/S	CARBON FILM	27	kohm	1/5 W	J	3069273970	2	
R229	METAL FILM	10	kohm	1/5 W	J	3069103970	1	
R230	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R231	METAL FILM	1	kohm	1/5 W	J	3029102970	1	
R232	METAL FILM	1.5	kohm	1/5 W	J	3029152970	1	
R233	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R234	METAL FILM	100	kohm	1/5 W	J	3069104970	1	
R235	CARBON FILM	6.8	kohm	1/5 W	J	3069682970	1	
R236	METAL FILM	3.3	kohm	1/5 W	J	3029332970	1	
R237C/S	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R238	METAL FILM	10	kohm	1/5 W	J	3069103970	1	
⚠ R240C/S	CEMET	0.27	ohm	5 W	J	3059027776	2	
R241	METAL FILM	1.8	kohm	1/5 W	J	3029182970	1	
R241C/S	THERMISTER, 3k					2438200220	2	

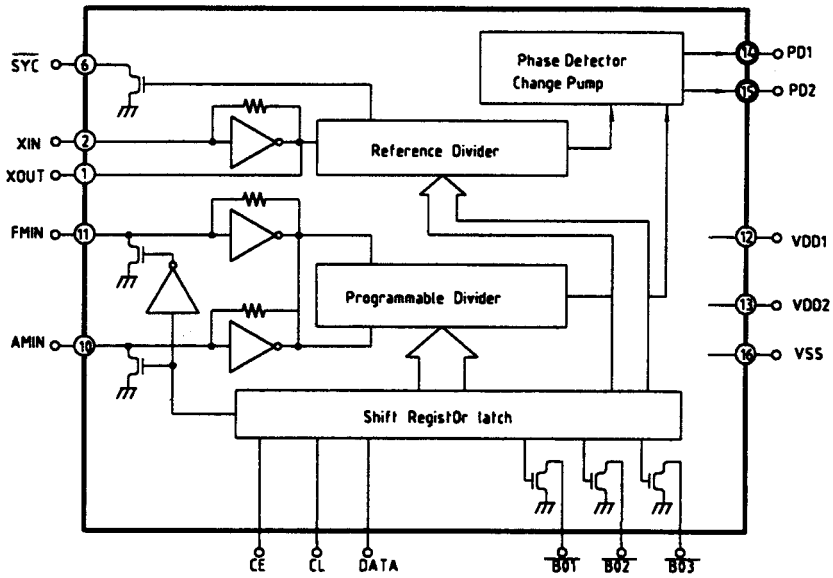
PCB7	ASSEMBLY P.C.BOARD INPUT CAPACITORS							
C402L/R	CERAMIC TUBULAR	100	pF	50 V	J	3519101935	2	
C403L/R	CERAMIC TUBULAR	100	pF	50 V	J	3519101935	2	
C404L/R	ELECTROLYTIC SG	4.7	μF	50 V	M	3479347971	2	
C405L/R	ELECTROLYTIC SG	47	μF	16 V	M	3479347031	2	
C406L/R	CERAMIC TUBULAR	2200	pF	16 V	J	3519222915	2	
C407L/R	MYLAR	0.0018	μF	100 V	J	3679182120	2	
C408L/R	MYLAR	0.0056	μF	100 V	J	3679562120	2	
C411L/R	ELECTROLYTIC SG	1	μF	50 V	M	3479310971	2	
C412L/R	ELECTROLYTIC SG	47	μF	16 V	M	3479347031	2	
C413L/R	MYLAR	0.0018	μF	100 V	J	3679182120	2	

REF. NO.	DESCRIPTION				PARTS NO.	Q'TY	REMARKS
C414	CERAMIC TUBULAR	100	pF	50 V J	3519101935	1	
C415L/R	ELECTROLYTIC SG	4.7	μF	50 V M	3479347971	2	
C416/C417	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C418L/R	ELECTROLYTIC SG	47	μF	16 V M	3479347031	2	
C421L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C422L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C423L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C424L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C425L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C426L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C427L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C441L/R	ELECTROLYTIC SG	4.7	μF	50 V M	3479347971	2	
C442L/R	ELECTROLYTIC SG	47	μF	16 V M	3479347031	2	
C443L/R	ELECTROLYTIC SG	1	μF	50 V M	3479310971	2	
C445L/R	MYLAR	0.0022	μF	100 V J	3679222120	2	
C446L/R	POLY	0.1	μF	63 V J	3633104187	2	
C447L/R	POLY	0.1	μF	63 V J	3633104187	2	
C448	ELECTROLYTIC SG	47	μF	16 V M	3479347031	1	
C451	ELECTROLYTIC SG	22	μF	16 V M	3479322031	1	
C461L/R	ELECTROLYTIC SG	1	μF	50 V M	3479310971	2	
C462L/R	CERAMIC TUBULAR	820	pF	50 V J	3519821935	2	
C463L/R	CERAMIC TUBULAR	100	pF	50 V J	3519101935	2	
C464L/R	ELECTROLYTIC SG	4.7	μF	50 V M	3479347971	2	
C465L/R	ELECTROLYTIC SG	47	μF	16 V M	3479347031	2	
C471L/R	CERAMIC TUBULAR	150	pF	50 V J	3519151935	2	
	CONNECTORS						
CN401	PLUG, 35237-1210				4428861112	1	
CN402	PLUG, 35237-1210				4428861112	1	
	DIODE						
D451	ZENER, UZ 9.1BSC				2258599107	1	
	INTEGRATED CIRCUITS						
IC401	KIA75559P/KIA4559P				2168206104	1	
IC421	TC9273N-007				2168307100	1	
IC441	KIA75559P/KIA4559P				2168206104	1	
IC451	TDA7315D				2139035100	1	
IC461	KIA75559P/KIA4559P				2168206104	1	
	COILS						
L401L/R	INDUCTOR, 47 uH				2648647082	2	
	RESISTORS						
R401L/R	METAL FILM	1	kohm	1/5 W J	3029102970	2	
R402L/R	CARBON FILM	91	kohm	1/5 W J	3069913970	2	
R403L/R	CARBON FILM	91	kohm	1/5 W J	3069913970	2	
R404L/R	METAL FILM	820	ohm	1/5 W J	3029821970	2	
R405L/R	CARBON FILM	43	kohm	1/5 W J	3069433970	2	
R406L/R	CARBON FILM	560	kohm	1/5 W J	3069564970	2	
R407L/R	METAL FILM	560	ohm	1/5 W J	3029561970	2	

REF. NO.	DESCRIPTION					PARTS NO.	Q'TY	REMARKS
R408L/R	METAL FILM	100	kohm	1/5 W	J	3069104970	2	
R409L/R	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R412-R414	METAL FILM	1	kohm	1/5 W	J	3029102970	3	
R421L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R422L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R423L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R424L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R426L/R	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R441L/R	METAL FILM	470	ohm	1/5 W	J	3029471970	2	
R442L/R	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R443L/R	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R444L/R	METAL FILM	470	ohm	1/5 W	J	3029471970	2	
R445L/R	METAL FILM	100	kohm	1/5 W	J	3069104970	2	
R446/R447	CARBON FILM	6.8	kohm	1/5 W	J	3069682970	2	
R448	METAL FILM	330	ohm	1/5 W	J	3029331970	1	
R451	CARBON FILM	47	kohm	1/5 W	J	3069473970	1	
R461L/R	METAL FILM	470	ohm	1/5 W	J	3029471970	2	
R462L/R	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R463L/R	METAL FILM	3.3	kohm	1/5 W	J	3029332970	2	
R464L/R	METAL FILM	100	ohm	1/5 W	J	3029101970	2	
R465L/R	METAL FILM	1	kohm	1/5 W	J	3029102970	2	
R466L/R	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R467L/R	CARBON FILM	47	kohm	1/5 W	J	3069473970	2	
R471L/R	METAL FILM	100	kohm	1/5 W	J	3069153970	2	
	MISCELLANEOUS							
29	JACK RCA, 4P					4438108110	2	
30	JACK RCA, 2P					4438111510	1	

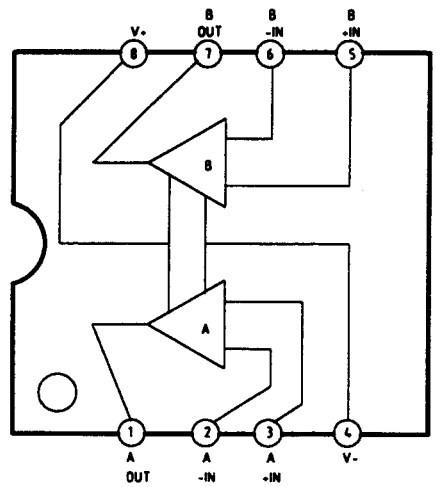
IC FUNCTIONAL BLOCK DIAGRAM

IC 1 : LM 7001M

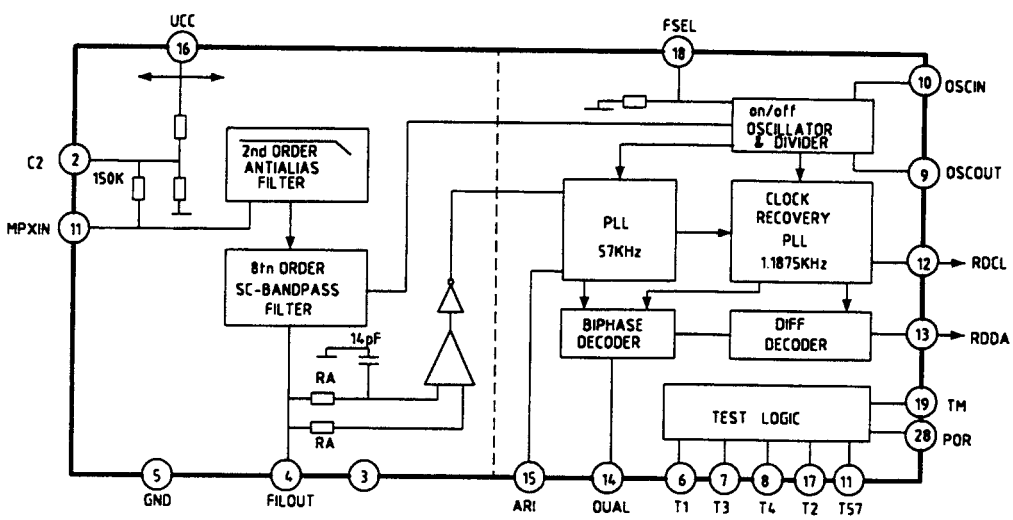


Pin Name		
No	LM 7001	LM7001M
1	XOUT	XOUT
2	XIN	XIN
3	CE	NC
4	CL	CE
5	DATA	CL
6	SYC	DATA
7	B01	SYC
8	B02	B01
9	B03	B02
10	AMIN	B03
11	FMIN	NC
12	VDD1	AMIN
13	VDD2	NC
14	PD1	FMIN
15	PD2	NC
16	VSS	VDD1
17		VDD2
18		PD1
19		PD2
20		VSS

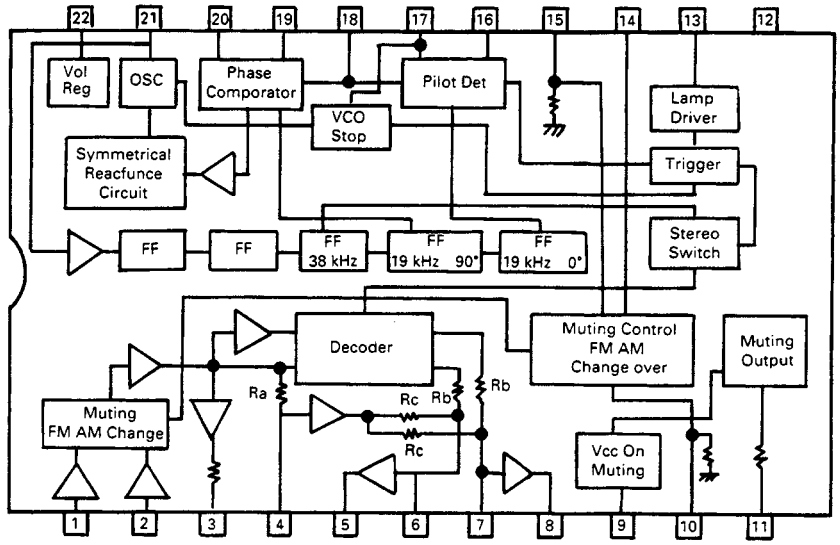
IC 401/IC441/IC461/IC571 : KIA4559P, KIA7559P



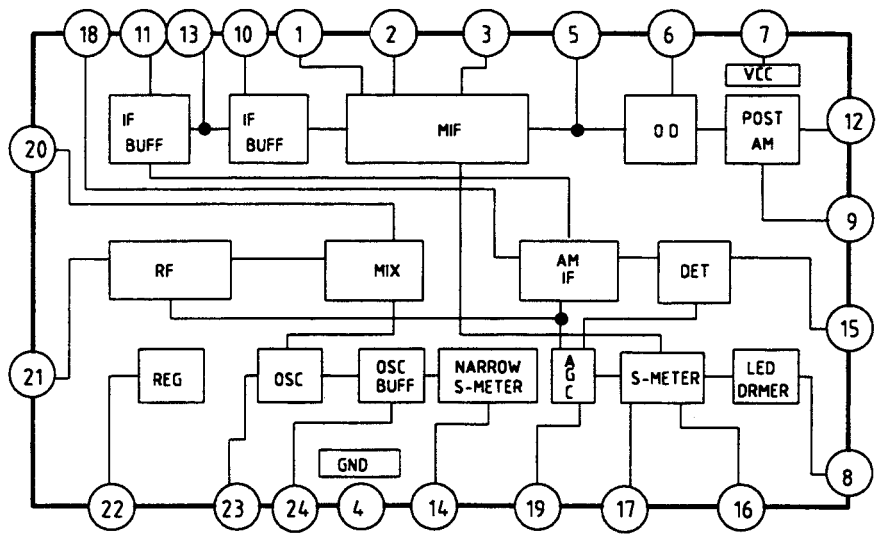
IC 4D : TDA7330BD



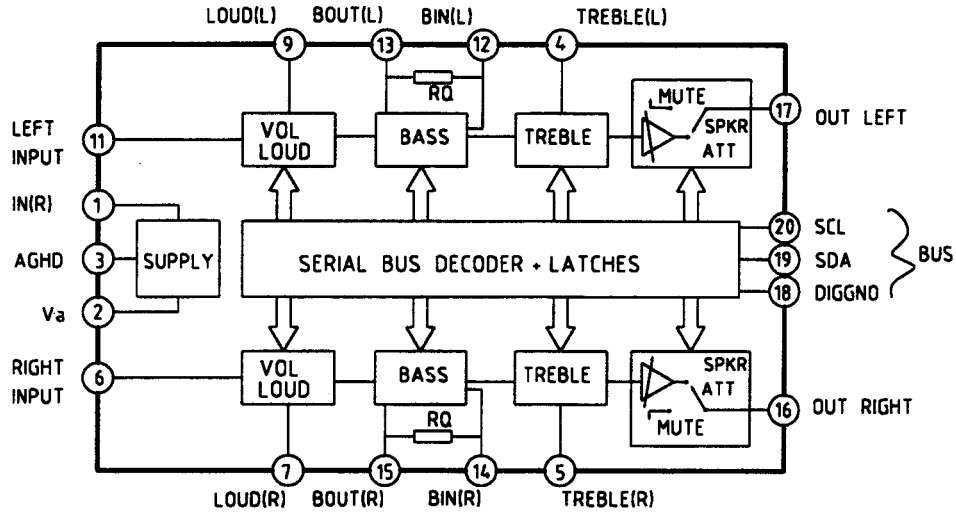
IC 3 : LA3401



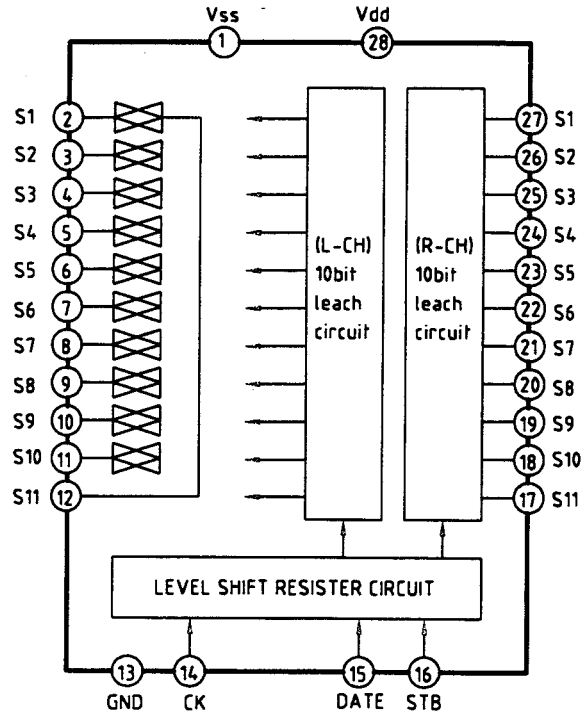
IC 2 : LA1266G



IC 451 : TDA7315D



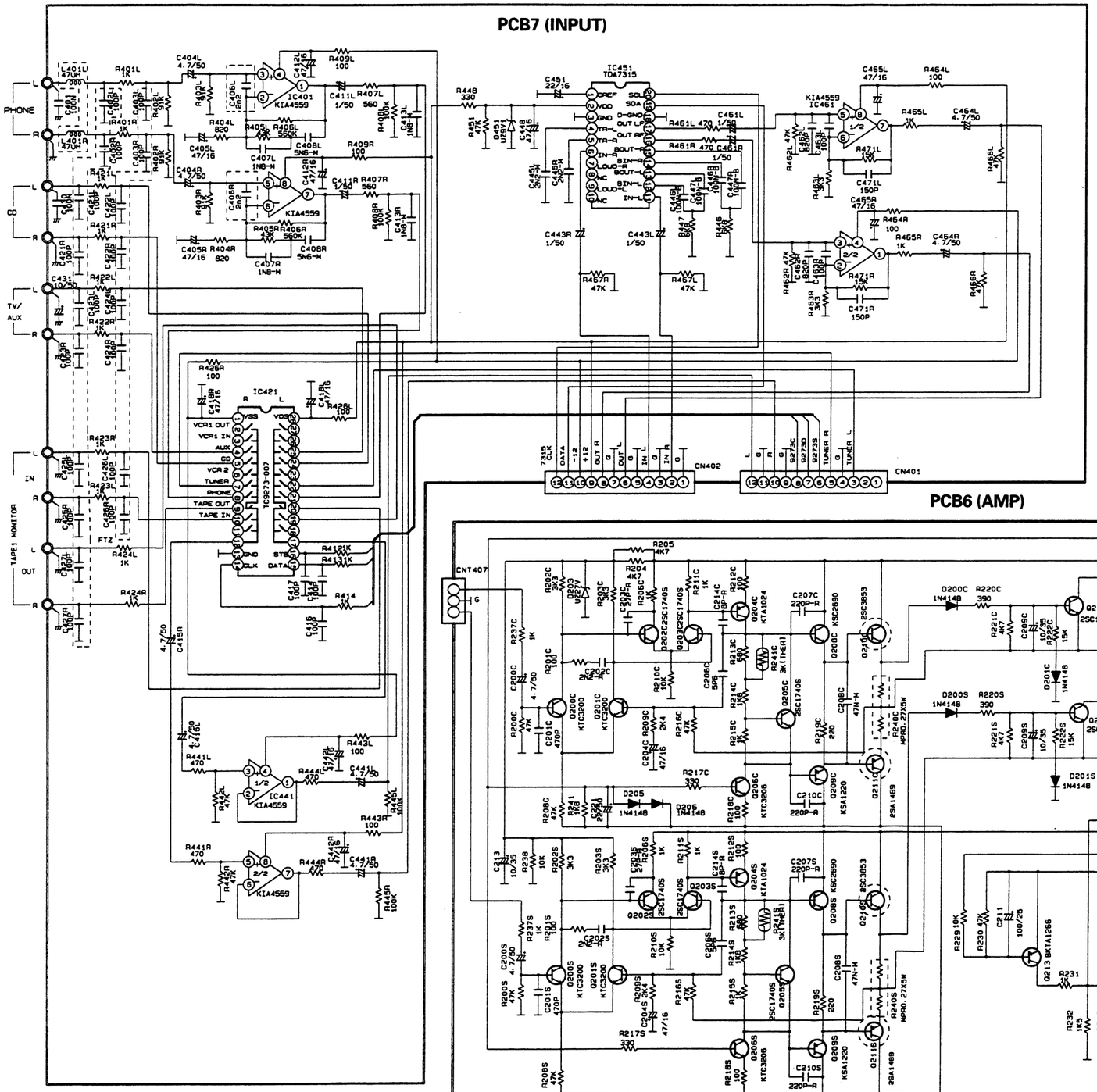
IC 421 : TC9273N-007



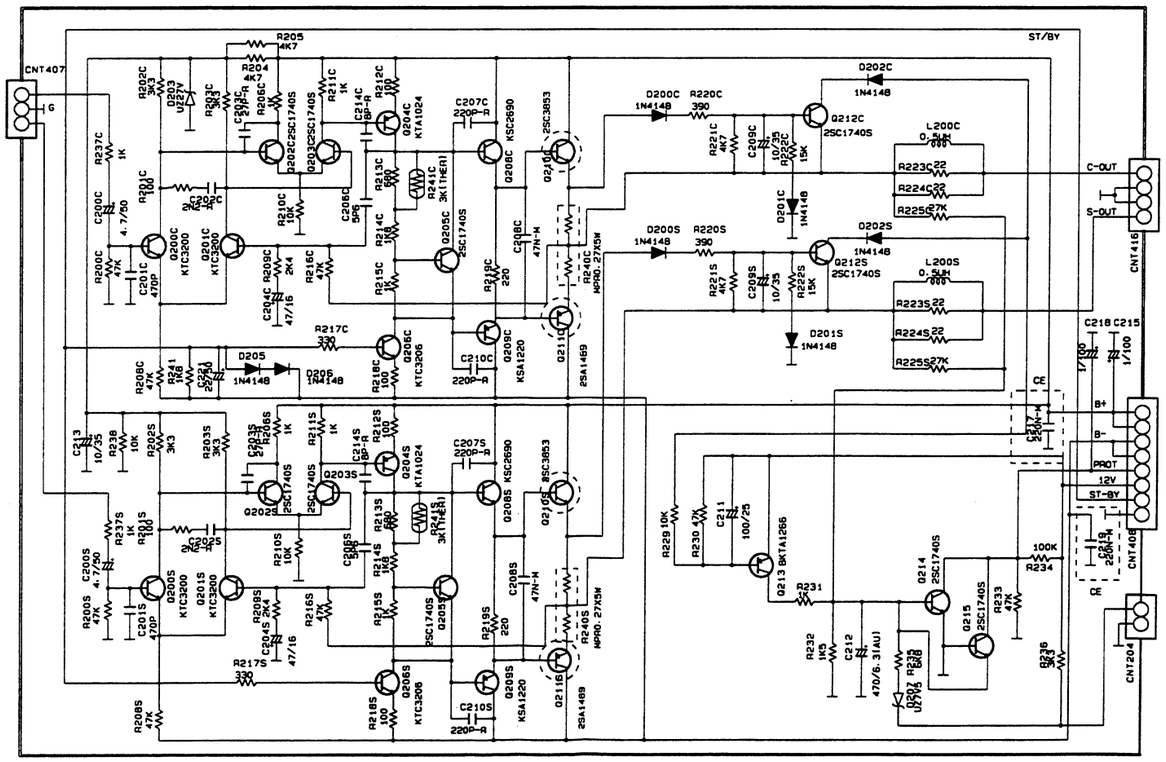
SCHEMATIC DIAGRAM (I)

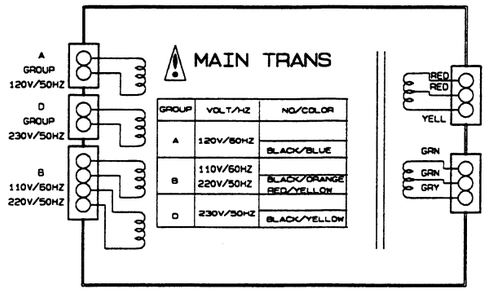
Model No. : RX-2060R/RDS

PCB7 (INPUT)

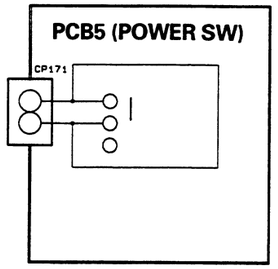


PCB6 (AMP)

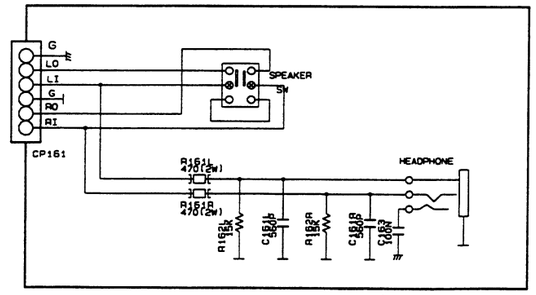


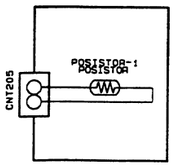


PCB5 (POWER SW)



PCB4 (HEADPHONE)

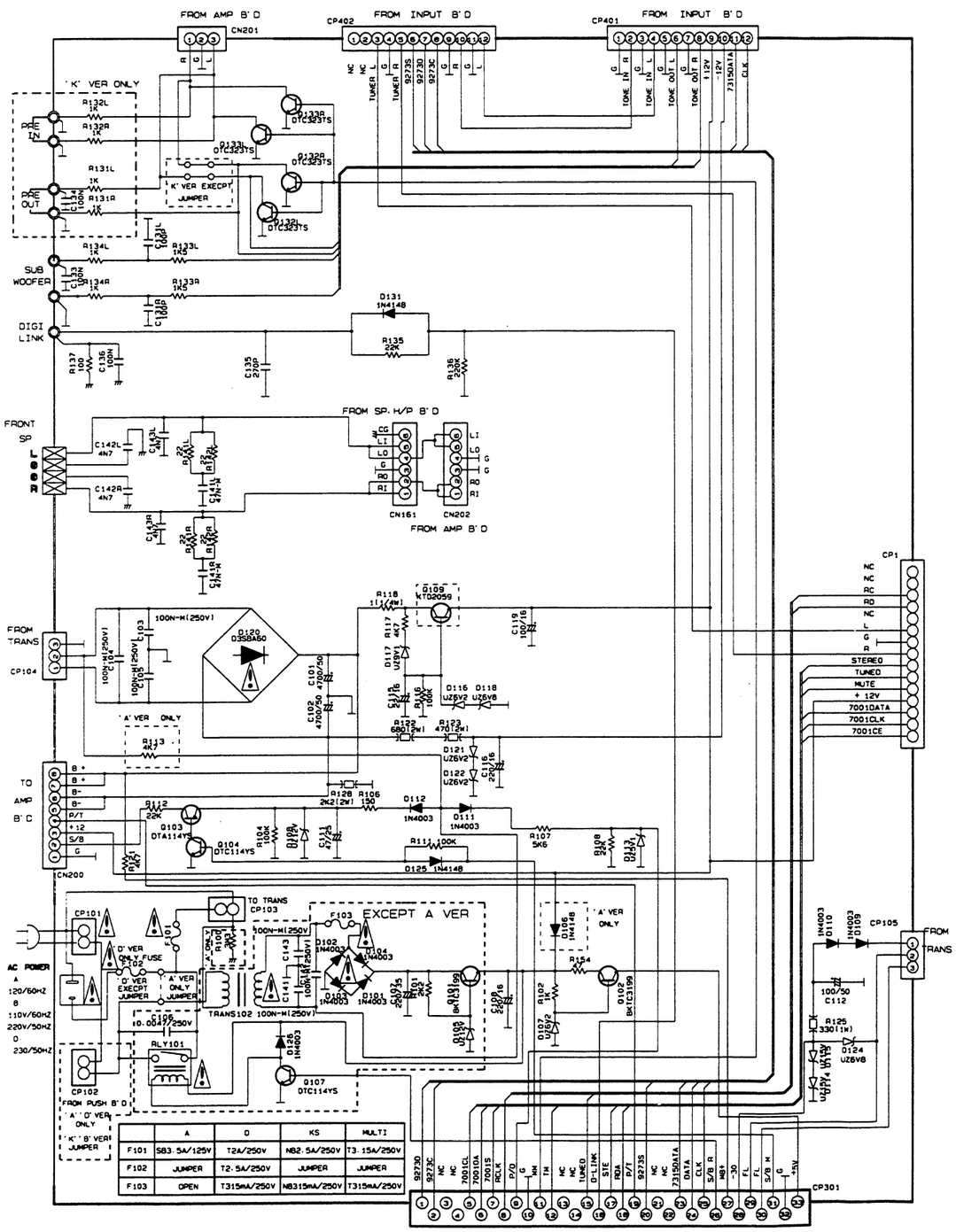




SCHEMATIC DIAGRAM (II)

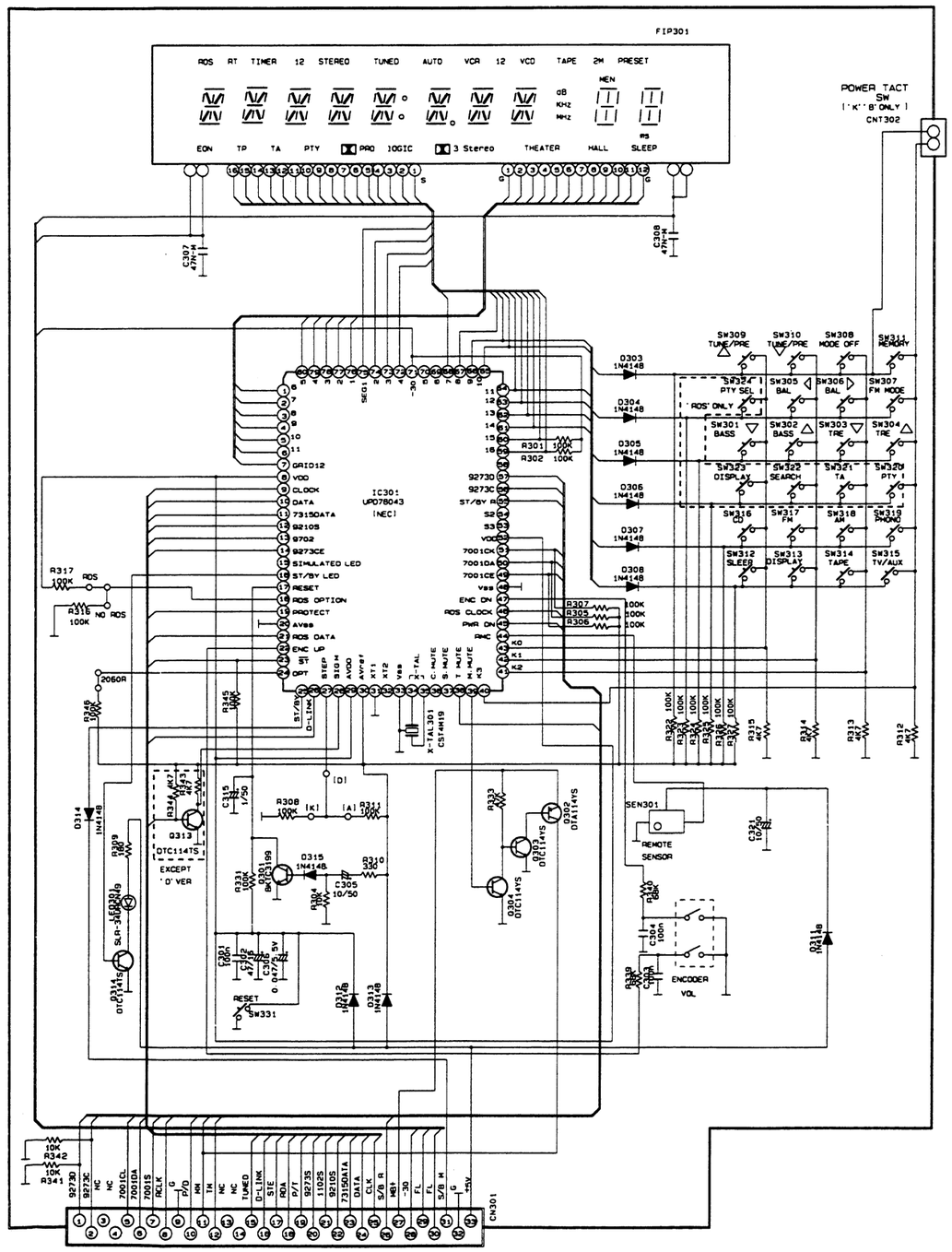
Model No. : RX-2060R/RDS

PCB2 (MAIN)



	A	O	KS	MULTI
F101	SB3.5A/125V	T2A/250V	NB2.5A/250V	T3.15A/250V
F102	JUMPER	T2.5A/250V	JUMPER	JUMPER
F103	OPEN	T315mA/250V	NB315mA/250V	T315mA/250V

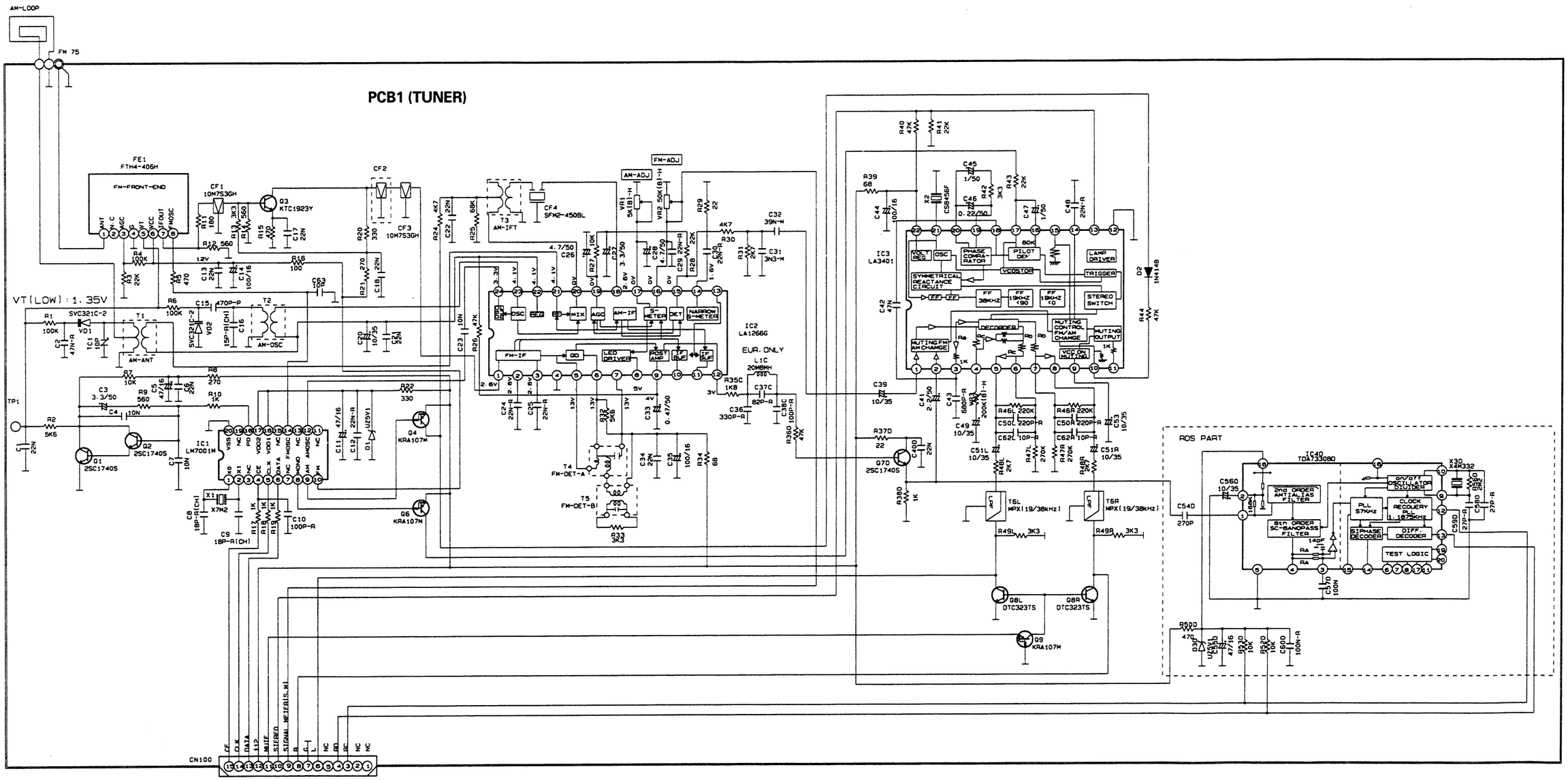
PCB3 (FRONT)



SCHEMATIC DIAGRAM (III)

Model No. : RX-2060R/RDS

PCB1 (TUNER)



NOTES

1. Resistor values are indicated in ohms unless otherwise specified (K=1,000 M=1,000,000)
2. Capacitor values are indicated in microfarades unless otherwise specified. (P=micro-microfarades)

CAUTION

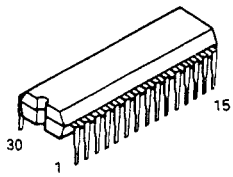
Safety precaution to be followed during servicing

1) Since those parts marked with ⚠ are critical parts for safety, use only the one described in the parts list

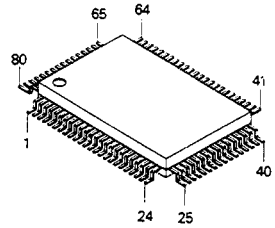
2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS

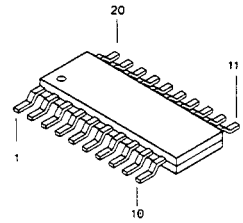
TC9273N-007



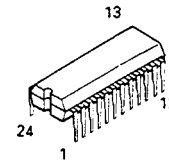
μPD78042
μPD78043AGF



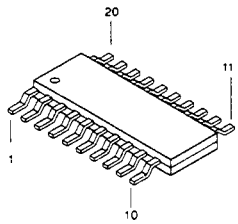
LM7001/M
TDA7330BD



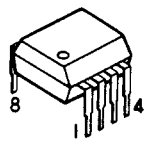
LA3401
LA1266



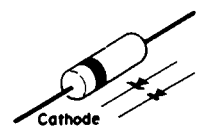
TDA7315D



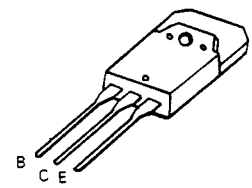
KIA4559P/KIA7555P



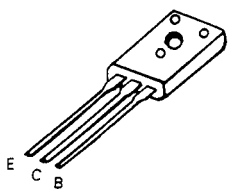
ZENER
IN4003
IN4148



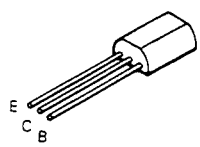
2SC3853
2SA1489



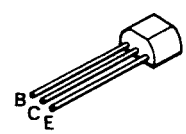
KSC2690A
KSC1220A



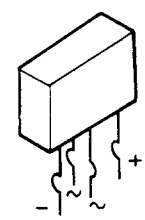
KTC2229/KTC3206
KTA949/KTA1024



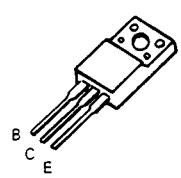
DTA114YS KRA107N
DTC114YS DTC323TS
DTC114YS 2SC3199Y
2SC1740
KTA1267



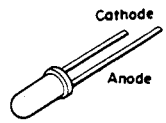
D3BA60



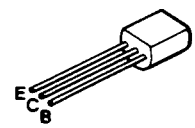
2SA2509Y/KTD2059Y



SLR-34URCN49
SLR-34YCN49



KTC2240/KTC3200
KTC1923Y/KTC3194



SVC321SPA-C